state college area
CONNECTOR

PennDOT.gov/SCAC

Wetland and Watercourse Identification and Delineation Report

for the

State College Area Connector



April 2025

pennsylvania
DEPARTMENT OF TRANSPORTATION

U.S. Department of Transportation
Federal Highway Administration

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List of Acronyms

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GPS	Global Positioning Systems
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
PA Code	Pennsylvania Code
PA DEP	Pennsylvania Department of Environmental Protection
PASPGP	Pennsylvania State Programmatic General Permit
PEL	Planning and Environmental Linkage
PEM	Palustrine Emergent
PennDOT	Pennsylvania Department of Transportation
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
POW	Palustrine Open Water
PSS	Palustrine Scrub-Shrub
RAP	Rapid Assessment Protocol(s)
SCAC	State College Area Connector
SCOTUS	Supreme Court of the United States
S.R.	State Route
SSURGO	Soil Survey and Soil Survey Geographic Database
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States

I. INTRODUCTION

1.0 Introduction

1.1 Project Location and Description

Skelly and Loy, Inc., *A Terracon Company*, conducted wetland and watercourse investigations during the period of January 2023 through September 2023 for the Pennsylvania Department of Transportation (PennDOT), Engineering District 2-0, State College Area Connector (SCAC) project in Harris and Potter Townships, Centre County, Pennsylvania. This project will involve the expansion of a section of United States (U.S.)/State Route (S.R.) 322 (U.S. 322) east/southeast of State College, Pennsylvania. The easternmost limit of the project area is located at approximately 40.7950° latitude and -77.6291° longitude and the westernmost limit is located at approximately 40.7842° latitude and -77.7875° longitude (Figure 1). The project area for the delineations included approximately six (6) square miles (approximately 3,963 acres): approximately 8.75 miles east to west with an approximate maximum width of 1.25 miles north and south of U.S. 322. Delineations were conducted on a parcel-by-parcel basis, with access contingent upon prior landowner coordination. Two hundred eighteen (218) wetlands and one hundred four (104) watercourses were delineated within the finalized project area. It should be noted that the project area was revised in 2024, removing the S.R. 45 Connector, and the aquatic resources identified in those areas are not detailed in the report. Additionally, numerous stormwater features, including non-jurisdictional stormwater wetlands, stormwater conveyances, and stormwater retention basins, were identified throughout the project area. The attached wetland and watercourse location mapping depicts the project location, approximate project area, and existing conditions (Appendix A). A detailed, virtual copy of the project area and delineated resources can be found on the ArcGIS Public Webmap:

https://terracon.maps.arcgis.com/apps/webappviewer/index.html?id=e41bc8fe87ba4903bbc4c10a17283269

This report documents descriptive information regarding the characteristics of the resources identified within the project area but does not describe or discuss any proposed impacts. Included in the report is a description of study methodologies and results along with the following supportive information: Wetland and Watercourse Location Map (Appendix A), Routine On-site Wetland Determination Data Forms (Appendix B), Wetland Functional and Rapid Assessment Data Forms (Appendix C), Riverine Rapid Assessment Data Forms (Appendix D), Representative Photo Log (Appendix E), List of References (Appendix F), and resumes of the field investigation team (Appendix G).

Encroachment into, or obstruction of, jurisdictional wetlands and watercourses potentially requires the acquisition of Federal Authorization from the United States Army Corps of Engineers (USACE) under *Section 404* of the *Federal Clean Water Act* as well as state authorization from the Pennsylvania Department of Environmental Protection (PA DEP) under *Pennsylvania Code (PA Code), Title 25, Chapter 105, Dam Safety and Waterway Management*.

II. METHODOLOGIES

2.0 Aquatic Resource Delineation Methodology

2.1 Off-Site Review

The wetland and watercourse investigation included both off-site and on-site reviews, including a detailed review of the Planning and Environmental Linkage (PEL) study, to identify potential wetlands and watercourses. The off-site investigation consisted of reviewing the following existing information: United States Geological Survey (USGS) mapping (Centre Hall, State College); U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper); Centre County Soil Survey; readily available (Internet) aerial photography; PA DEP eMapPA online application (http://www.depgis.state.pa.us/emappa); Federal Emergency Management Agency (FEMA) Flood Map Service Center (https://www.fema.gov); United States Department of Agriculture (USDA) - Natural Resources Conservation Service's (NRCS) Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov); and the Pennsylvania County Listing of Hydric Soils. Information regarding mapped soils and NWI resources within the project area can be found on the Routine On-site Wetland Determination Data Forms in Appendix B. A review of the FEMA Flood Map Service Center indicates that portions of this project are located within mapped 100-year FEMA floodplains associated with Sinking Creek, Boal Gap Run, Spring Creek, and Galbraith Gap Run.

2.2 On-Site Evaluations and Data Collection

The on-site wetland and watercourse investigation was conducted using the Routine On-Site Wetland Delineation Method described in the *USACE's Wetland Delineation Manual, Technical Report Y-87-1 (1987)* and the *Regional Supplement to the USACE's Wetland Delineation Manual: Eastern Mountains and Piedmont (2012).* If present, wetlands identified were classified in accordance with the USFWS' Classification of Wetlands and Deepwater Habitats of the United States (*Cowardin, et al., 1979*). Dominant vegetation, soil characteristics, and indicators of hydrology were evaluated for potential wetland and upland habitat in the project area. It should be noted that due to landowner access restrictions, two probable wetland areas were included in the mapping as "Assumed Wetlands". A review of aerial imagery depicts strong evidence of water staining and drainage patterns. Additionally, in-field observations from adjacent parcels and/or parts of the property identified strong hydrophytic vegetative communities. These wetland areas were drawn in via GIS using the combination of all available data possible to make a best professional judgement on the highest likelihood of the wetland boundaries and limits. No formal data was collected on these two Assumed Wetland locations and were not detailed in Appendices B or C.

The Munsell Soil Color chart was used to determine matrix and mottle colors for each soil sample. This information was recorded on the Routine On-site Wetland Determination Data Forms (Appendix B). The representative wetland and upland points presented in the USACE data forms are depicted on the Wetland and Watercourse Location Map (Appendix A). The wetland boundaries were identified in the field, and each delineation flag was located using global positioning systems (GPS) survey technologies pursuant to USACE survey accuracy standards for mapping aquatic resources. It should be noted that in addition to surveys of their boundaries, wetlands within the project area were further micro-delineated and surveyed according to their dominant vegetative strata or hydrological classifications (i.e., palustrine emergent [PEM], palustrine scrub-shrub [PSS], palustrine forested [PFO], and palustrine open water [POW]). In many cases, delineated wetland systems contained a mosaic of classes, as depicted in Appendix A and described in Appendix B.

The functions and values for each wetland and watercourse were identified through evaluation of the PA DEP Rapid Assessment Protocols (RAP), Level II. In addition, the wetland assessment also included the assessment of functions

and values of the wetlands using the USACE's New England Method. This involved grouping the wetlands into "like" categories based upon hydrogeomorphic and landscape position characteristics. The RAP forms and functional assessment forms are provided in the appendices.

III. EXISTING CONDITIONS

3.0 Existing Conditions

The land use/land cover features in the vicinity of the project area included wooded lots, wooded scrub-shrub riparian corridors, farmsteads, agricultural fields, pastures (horse and livestock), mowed areas (lawns and roadsides), miscellaneous businesses, recreational parks, U.S. 322, commercial and residential driveways, commercial and recreational parking lots, and secondary roadways. Two hundred eighteen (218) wetlands and one hundred four (104) watercourses were delineated within the original project area. It should be noted that the project area was revised in 2024, removing the S.R. 45 Connector. As a result, three (3) wetlands and one (1) watercourse were removed from the study and are highlighted in the summary tables to follow later in the text of this report. Additional detailed wetland and watercourse descriptions are included in the Routine On-site Wetland Determination Data Forms (Appendix B) and the rapid and functional assessment data forms (Appendices C and D). Representative photographs of the delineated aquatic resources, stormwater systems, and project area are included in Appendix E. Table 1 presents the delineated wetlands, page number per map sheet (Appendix A), delineated acreages, Cowardin classifications, hydrogeomorphic categories, and physical characteristics of the resources.

TABLE 1
WETLAND SUMMARY TABLE

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-BPH-001	23	0.012	Sinking Creek	No	PEM/PSS	Depressional Wetland	0.74
WL-BPH-002	23	2.129	Sinking Creek	Yes	PEM/PSS/ PFO/POW	Large Floodplain Wetland/Pond	0.72 (PEM/PSS/PFO); 0.70 (POW)
WL-BPH-003	23	0.036	Sinking Creek	No	PEM	Depressional Wetland	0.75
WL-BPH-004	23	0.001	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.83
WL-BPH-005	20	0.511	Sinking Creek	No	PEM	Mesic/Farmland Wetland	0.63
WL-BPH-006	21	1.167	Sinking Creek	Yes	PEM/PSS/PFO	Large Floodplain Wetland	0.71
WL-BPH-007	23	0.023	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.72

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-BPH-008	20	0.008	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.78
WL-BPH-009	17	0.043	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.83
WL-BPH-010	17	0.201	Sinking Creek	Yes	PEM/PSS	Small Floodplain Bench	0.83
WL-BPH-011	20	0.026	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.82
WL-BPH-012	20	0.13	Sinking Creek	Yes	PEM/PSS	Small Floodplain Bench	0.70
WL-BPH-013	7	0.252	Spring Creek	Yes	PEM/PSS	Hillside/Headwater Seep	0.82
WL-BPH-014	7	0.012	Spring Creek	Yes	PEM	Small Floodplain Bench	0.81
WL-BPH-015	7	0.391	Spring Creek	Yes	PEM/PFO	Small Floodplain Bench	0.78
WL-BPH-016	7	0.009	Spring Creek	No	PEM	Depressional Wetland	0.81
WL-BPH-017	8	0.003	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-BPH-018	8	0.005	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-BPH-019	8	0.003	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-BPH-020	8	0.032	Spring Creek	Yes	PEM	Small Floodplain Bench	0.78
WL-BPH-021	8	0.002	Spring Creek	Yes	PEM	Small Floodplain Bench	0.60

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-BPH-022	18	0.022	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.84
WL-BPH-023	18	0.091	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.86
WL-BPH-024	18	0.047	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.86
WL-BPH-025	2	0.002	Spring Creek	No	PEM	Depressional Wetland	0.64
WL-CML-001	11 & 12	1.35	Spring Creek	Yes	PEM/PSS/POW	Hillside/Headwater Seep/Pond	0.75 (PEM/PSS); 0.81 (POW)
WL-CML-002	8	0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.79
WL-CML-003	3	0.005	Spring Creek	Yes	PEM	Small Floodplain Bench	0.83
WL-CML-004	2	0.041	Spring Creek	Yes	PEM	Large Floodplain Wetland	0.75
WL-CML-005	2	0.007	Spring Creek	Yes	PSS	Small Floodplain Bench	0.75
WL-CML-006	2	0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.74
WL-CML-007	2	0.002	Spring Creek	Yes	PSS	Small Floodplain Bench	0.77
WL-CML-008	2	0.025	Spring Creek	Yes	PSS	Small Floodplain Bench	0.77
WL-CML-009	3	0.129	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.79
WL-CML-010	5	> 0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-CML-011	5	0.002	Spring Creek	Yes	PEM	Small Floodplain Bench	0.72
WL-CML-012	5	0.109	Spring Creek	Yes	PEM	Small Floodplain Bench	0.74
WL-CML-013	5	> 0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.78
WL-CML-014	5	> 0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-CML-015	5	> 0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-CML-016	5	0.003	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-CML-017	7	0.664	Spring Creek	Yes	PEM/POW	Small Floodplain Bench/Pond	0.82 (PEM); 0.77 (POW)
WL-CML-018	7	0.031	Spring Creek	Yes	PSS	Hillside/Headwater Seep	0.79
WL-CML-019	3	0.008	Spring Creek	Yes	PEM	Small Floodplain Bench	0.87
WL-CML-020	7	0.042	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-DJW-001	12	0.023	Spring Creek	No	PEM	Hillside/Headwater Seep	0.85
WL-DJW-002	12	0.017	Spring Creek	No	PEM	Depressional Wetland	0.89
WL-DJW-003	3	0.006	Spring Creek	Yes	PEM	Small Floodplain Bench	0.78
WL-DJW-004	7	0.063	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-DJW-005	7	0.034	Spring Creek	Yes	PEM	Small Floodplain Bench	0.81
WL-LTZ-001	22	8.803	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.73
WL-LTZ-002	22	0.579	Sinking Creek	Yes	PSS	Large Floodplain Wetland	0.84
WL-LTZ-003	22	0.03	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.85
WL-LTZ-004	22	0.133	Sinking Creek	No	PEM	Mesic/Farmland Wetland	0.69
WL-LTZ-005	22	0.172	Sinking Creek	No	PEM	Mesic/Farmland Wetland	0.67
WL-LTZ-006	23	0.089	Sinking Creek	No	PEM	Hillside/Headwater Seep	0.78
WL-LTZ-007	23	0.08	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.75
WL-LTZ-008	23	1.62	Sinking Creek	Yes	PEM/PSS/POW	Large Floodplain Wetland	0.72 PEM/PSS); 0.74 (POW)
WL-LTZ-009	23	0.04	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.76
WL-LTZ-010	20	0.512	Sinking Creek	Yes	PEM/PSS	Mesic/Farmland Wetland	0.73
WL-LTZ-011	20	4.932	Sinking Creek	Yes	PEM/PSS/PFO/ POW	Large Floodplain Wetland/Pond	0.70 (PEM/PSS/PFO); 0.72 (POW)
WL-LTZ-012	20 & 22	0.011	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.86
WL-LTZ-013	20	0.091	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.83

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-014	22	0.049	Sinking Creek	Yes	PFO	Small Floodplain Bench	0.88
WL-LTZ-015	22	0.059	Sinking Creek	Yes	PFO	Small Floodplain Bench	0.84
WL-LTZ-016	22	13.453	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.79
WL-LTZ-017	22	0.021	Sinking Creek	Yes	PSS	Small Floodplain Bench	0.86
WL-LTZ-018	22	0.017	Sinking Creek	Yes	PFO	Small Floodplain Bench	0.86
WL-LTZ-019	20 & 22	2.312	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.85
WL-LTZ-020	21 & 23	0.68	Sinking Creek	Yes	PEM/PSS/PFO	Hillside/Headwater Seep	0.78
WL-LTZ-021	21 & 23	0.142	Sinking Creek	No	PEM/PSS	Depressional Wetland	0.72
WL-LTZ-022	20 & 22	0.597	Sinking Creek	No	PEM/POW	Small Floodplain Bench/ Pond	0.72 (PEM); 0.74 (POW)
WL-LTZ-023	22	0.85	Sinking Creek	Yes	PEM/PSS/POW	Small Floodplain Bench/Pond	0.74 (PEM/PSS); 0.74 (POW)
WL-LTZ-024	21	1.691	Sinking Creek	Yes	PEM	Hillside/Headwater Seep	0.61
WL-LTZ-025	20 & 21	0.228	Sinking Creek	No	PEM	Mesic/Farmland Wetland	0.61
WL-LTZ-026	23	0.049	Sinking Creek	No	PEM	Depressional Wetland	0.71
WL-LTZ-027	20 & 21	2.906	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.74

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-028	20	1.724	Sinking Creek	Yes	PEM/PSS/POW	Large Floodplain Wetland/Pond	0.77 (PEM/PSS); 0.73 (POW)
WL-LTZ-029	20	0.705	Sinking Creek	No	PEM	Mesic/Farmland Wetland	0.63
WL-LTZ-030	18 & 21	10.467	Sinking Creek	Yes	PEM/PSS/PFO	Large Floodplain Wetland	0.79
WL-LTZ-031	21	0.049	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.80
WL-LTZ-032	21	0.008	Spring Creek	No	PEM	Depressional Wetland	0.78
WL-LTZ-033	11	0.097	Spring Creek	Yes	PEM	Small Floodplain Bench	0.75
WL-LTZ-034	21	0.288	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.82
WL-LTZ-035	20 & 21	16.277	Sinking Creek	Yes	PEM/PSS/PFO	Large Floodplain Wetland	0.66
WL-LTZ-036	20 & 21	1.035	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.73
WL-LTZ-037	20	0.274	Sinking Creek	No	POW	Pond	0.76
WL-LTZ-038	18, 19, 20, & 21	37.611	Sinking Creek	Yes	PEM/PSS/PFO	Large Floodplain Wetland	0.73
WL-LTZ-039	20	0.208	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.71
WL-LTZ-040	17 & 20	3.489	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.73
WL-LTZ-041	21	0.014	Sinking Creek	Yes	PEM	Small Floodplain Bench	0.84
WL-LTZ-042	21	0.042	Sinking Creek	Yes	PEM/PFO	Small Floodplain Bench	0.87

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-043	17 & 18	3.444	Sinking Creek	Yes	PEM/PSS/PFO/ POW	Large Floodplain Wetland/Pond	0.65 (PEM/PSS/PFO); 0.76 (POW)
WL-LTZ-044	17	0.153	Sinking Creek	No	POW	Pond	0.76
WL-LTZ-045 *Removed due to project area change	N/A	0.123	Spring Creek	No	PEM/PSS	Mesic/Farmland Wetland	0.64
WL-LTZ-046 *Removed due to project area change	N/A	0.181	Spring Creek	No	PEM	Mesic/Farmland Wetland	0.62
WL-LTZ-047 *Removed due to project area change	N/A	0.228	Spring Creek	No	PEM/POW	Mesic/Farmland Wetland/Pond	0.62 (PEM); 0.63 (POW)
WL-LTZ-048	15	0.016	Sinking Creek	No	PSS	Depressional Wetland	0.69
WL-LTZ-049	14 & 15	2.637	Sinking Creek	Yes	PEM/POW	Large Floodplain Wetland/Pond	0.63 (PEM); 0.79 (POW)
WL-LTZ-050	14 & 18	0.235	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.67
WL-LTZ-051	14 & 18	0.366	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.72
WL-LTZ-052	15 & 16	11.299	Tussey Sink/Sleepy Creek	No	PEM/PSS	Large Floodplain Wetland	0.64
WL-LTZ-053	11	3.708	Spring Creek	Yes	PEM/PSS/POW	Hillside/Headwater Seep/Pond	0.73 (PEM/PSS); 0.78 (POW)
WL-LTZ-054	18	4.028	Sinking Creek	Yes	PEM/PSS/POW	Large Floodplain Wetland/Pond	0.68 (PEM/PSS); 0.77 (POW)
WL-LTZ-055	18	0.421	Sinking Creek	No	PEM	Hillside/Headwater Seep	0.76

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-056	15	0.507	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.73
WL-LTZ-057	15	0.008	Sinking Creek	No	PEM	Depressional Wetland	0.73
WL-LTZ-058	3 & 4	2.977	Spring Creek	Yes	PEM	Large Floodplain Wetland	0.66
WL-LTZ-059	3	1.73	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.70
WL-LTZ-060	3	0.821	Spring Creek	Yes	POW	Pond	0.69
WL-LTZ-061	3	1.429	Spring Creek	Yes	PEM/POW	Pond	0.69
WL-LTZ-062	3	0.259	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.70
WL-LTZ-063	3	0.092	Spring Creek	Yes	POW	Pond	0.71
WL-LTZ-064	3	0.46	Spring Creek	Yes	PEM	Large Floodplain Wetland	0.70
WL-LTZ-065	3	0.167	Spring Creek	Yes	PEM/PSS	Small Floodplain Bench	0.67
WL-LTZ-066	3	0.076	Spring Creek	Yes	POW	Pond	0.69
WL-LTZ-067	4 & 5	24.405	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.66
WL-LTZ-068	15	0.171	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.70
WL-LTZ-069	15 & 19	1.67	Sinking Creek	Yes	PEM	Large Floodplain Wetland	0.68
WL-LTZ-070	19	0.061	Sinking Creek	No	PEM/POW	Depressional Wetland/Pond	0.72 (PEM); 0.73 (POW)

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-071	19	0.006	Sinking Creek	No	PEM	Hillside/Headwater Seep	0.79
WL-LTZ-072	**N/A**	**N/A**	**N/A**	**N/A**	**SKIPPED IN FIELD***	**N/A**	**N/A**
WL-LTZ-073	4	8.792	Spring Creek	Yes	PEM/PSS/PFO/ POW	Large Floodplain Wetland/Pond	0.66
WL-LTZ-074	8	0.015	Spring Creek	No	PEM	Depressional Wetland	0.84
WL-LTZ-075	5	0.274	Spring Creek	No	POW	Pond	0.84
WL-LTZ-076	5	0.047	Spring Creek	Yes	PEM	Small Floodplain Bench	0.84
WL-LTZ-077	11	0.008	Spring Creek	Yes	PEM	Small Floodplain Bench	0.84
WL-LTZ-078	11	0.214	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.86
WL-LTZ-079	11	1.749	Spring Creek	Yes	PEM/PSS/PFO	Hillside/Headwater Seep	0.65
WL-LTZ-080	11	0.055	Spring Creek	No	PEM	Hillside/Headwater Seep	0.72
WL-LTZ-081	11	0.044	Spring Creek	Yes	PEM	Small Floodplain Bench	0.70
WL-LTZ-082	11	2.035	Spring Creek	Yes	PEM/POW	Hillside/Headwater Seep/Pond	0.71 (PEM); 0.71 (POW)
WL-LTZ-083	11	0.269	Spring Creek	Yes	PEM	Small Floodplain Bench	0.71
WL-LTZ-084	11	0.661	Spring Creek	No	PEM	Hillside/Headwater Seep	0.72
WL-LTZ-085	11	0.881	Spring Creek	Yes	PEM/PSS	Hillside/Headwater Seep	0.79
WL-LTZ-086	11	0.014	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-087	11	2.997	Spring Creek	No	PEM	Hillside/Headwater Seep	0.73
WL-LTZ-088	11	0.11	Spring Creek	No	PEM	Mesic/Farmland Wetland	0.72
WL-LTZ-089	8	0.166	Spring Creek	No	PEM	Hillside/Headwater Seep	0.78
WL-LTZ-090	8	0.039	Spring Creek	No	PEM	Hillside/Headwater Seep	0.92
WL-LTZ-091	11	0.002	Spring Creek	Yes	PEM	Small Floodplain Bench	0.79
WL-LTZ-092	8	0.71	Spring Creek	Yes	PEM/PSS/POW	Hillside/Headwater Seep/Pond	0.78 (PEM/PSS); 0.75 (POW)
WL-LTZ-093	8	0.057	Spring Creek	Yes	PEM/PSS	Hillside/Headwater Seep	0.78
WL-LTZ-094	8	0.01	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.86
WL-LTZ-095	8	0.017	Spring Creek	Yes	PEM/PSS	Small Floodplain Bench	0.79
WL-LTZ-096	8	0.048	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.84
WL-LTZ-097	8	0.016	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.84
WL-LTZ-098	8	0.737	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.77
WL-LTZ-099	8	0.027	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82
WL-LTZ-100	8	0.176	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.83
WL-LTZ-101	8	0.224	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.83
WL-LTZ-102	8	0.034	Spring Creek	Yes	PEM	Small Floodplain Bench	0.81
WL-LTZ-103	11	0.835	Spring Creek	No	POW	Pond	0.66

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-104	15	1.19	Tussey Sink/Sleepy Creek	No	PEM	Mesic/Farmland Wetland	0.74
WL-LTZ-105	8	0.006	Spring Creek	No	PEM	Depressional Wetland	0.83
WL-LTZ-106	8	0.067	Spring Creek	No	PEM	Depressional Wetland	0.85
WL-LTZ-107	16	0.424	Tussey Sink/Sleepy Creek	No	PEM	Small Floodplain Bench	0.83
WL-LTZ-108	22 & 23	2.579	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.73
WL-LTZ-109	22	4.884	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.72
WL-LTZ-110	22	3.343	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.82
WL-LTZ-111	**N/A**	**N/A**	**N/A**	**N/A**	**SKIPPED IN FIELD***	**N/A**	**N/A**
WL-LTZ-112	8	0.053	Spring Creek	Yes	PEM	Small Floodplain Bench	0.83
WL-LTZ-113	8	0.024	Spring Creek	No	PEM	Hillside/Headwater Seep	0.87
WL-LTZ-114	8	0.003	Spring Creek	Yes	PEM	Small Floodplain Bench	0.84
WL-LTZ-115	8	0.017	Spring Creek	No	PEM	Hillside/Headwater Seep	0.84
WL-LTZ-116	11 & 12	1.576	Sinking Creek	Yes	PEM/POW	Hillside/Headwater Seep/Pond	0.79 (PEM); 0.71 (POW)
WL-LTZ-117	12	0.02	Spring Creek	No	PEM	Hillside/Headwater Seep	0.86
WL-LTZ-118	12	0.001	Spring Creek	Yes	PSS	Hillside/Headwater Seep	0.91

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-119	7 & 11	0.079	Spring Creek	No	POW	Pond	0.76
WL-LTZ-120	7 & 8	0.047	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-LTZ-121	7	0.28	Spring Creek	No	POW	Pond	0.73
WL-LTZ-122	7	0.006	Spring Creek	No	PEM	Depressional Wetland	0.77
WL-LTZ-123	7	0.01	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-LTZ-124	7	0.004	Spring Creek	Yes	PEM	Small Floodplain Bench	0.79
WL-LTZ-125	12	0.108	Spring Creek	No	POW	Pond	0.71
WL-LTZ-126	12	0.152	Spring Creek	No	POW	Pond	0.71
WL-LTZ-127	12	0.038	Spring Creek	No	PEM	Depressional Wetland	0.75
WL-LTZ-128	12	0.023	Spring Creek	Yes	PEM/PFO	Small Floodplain Bench	0.82
WL-LTZ-129	11 & 12	0.009	Spring Creek	Yes	PEM/POW	Hillside/Headwater Seep/Pond	0.77
WL-LTZ-130	7 & 11	0.21	Spring Creek	No	PEM	Hillside/Headwater Seep	0.71
WL-LTZ-131	7	6.915	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.67
WL-LTZ-132	17 & 20	21.254	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.65
WL-LTZ-133	5	0.034	Spring Creek	No	PEM	Depressional Wetland	0.87
WL-LTZ-134	5	0.067	Spring Creek	No	PEM	Depressional Wetland	0.80
WL-LTZ-135	5	0.014	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.83

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-136	5	0.003	Spring Creek	No	PEM	Depressional Wetland	0.80
WL-LTZ-137	5	0.38	Spring Creek	No	PEM/POW	Pond	0.71
WL-LTZ-138	5	0.011	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-LTZ-139	5	0.245	Spring Creek	No	PEM	Hillside/Headwater Seep	0.82
WL-LTZ-140	5	0.34	Spring Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.75
WL-LTZ-141	5	0.002	Spring Creek	Yes	PEM	Small Floodplain Bench	0.78
WL-LTZ-142	5	0.031	Spring Creek	No	PEM	Depressional Wetland	0.79
WL-LTZ-143	5	3.061	Spring Creek	Yes	PEM	Large Floodplain Wetland	0.67
WL-LTZ-144	3	0.209	Spring Creek	No	PEM	Hillside/Headwater Seep	0.75
WL-LTZ-145	3	0.848	Spring Creek	No	PEM/POW	Depressional Wetland/Pond	0.74 (PEM); 0.70 (POW)
WL-LTZ-146	3	1.266	Spring Creek	No	PEM/POW	Depressional Wetland/Pond	0.85 (PEM); 0.73 (POW)
WL-LTZ-147	3	1.685	Spring Creek	Yes	PEM	Large Floodplain Wetland	0.63
WL-LTZ-148	3	15.468	Spring Creek	Yes	PEM/PSS/POW	Large Floodplain Wetland/Pond	0.70 (PEM/PSS); 0.83 (POW)
WL-LTZ-149	3	0.065	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82
WL-LTZ-150	3	0.395	Spring Creek	Yes	PEM/POW	Pond	0.81 (PEM); 0.78 (POW)

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-151	3	0.551	Spring Creek	Yes	PEM/POW	Pond	0.81 (PEM); 0.77 (POW)
WL-LTZ-152	3	0.152	Spring Creek	No	PEM/POW	Depressional Wetland/Pond	0.74 (PEM); 0.75 (POW)
WL-LTZ-153	3	0.069	Spring Creek	No	PEM	Depressional Wetland	0.82
WL-LTZ-154	7	0.002	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.83
WL-LTZ-155	7	0.011	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-LTZ-156	7	0.012	Spring Creek	Yes	PEM	Small Floodplain Bench	0.77
WL-LTZ-157	7	3.702	Spring Creek	Yes	PEM/PSS/PFO	Large Floodplain	0.69
WL-LTZ-158	7	0.004	Spring Creek	Yes	PEM	Small Floodplain Bench	0.82
WL-LTZ-159	4 & 7	1.351	Spring Creek	Yes	PEM/PSS/PFO	Large Floodplain Wetland	0.70
WL-LTZ-160	8	0.001	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-LTZ-161	8	0.009	Spring Creek	Yes	PEM	Small Floodplain Bench	0.75
WL-LTZ-162	15 & 19	0.951	Sinking Creek	Yes	PEM/PSS	Large Floodplain Wetland	0.70
WL-LTZ-163	18 & 19	0.577	Sinking Creek	No	PEM	Hillside/Headwater Seep	0.66
WL-LTZ-164	15	2.063	Tussey Sink/Sleepy Creek	No	PEM/PSS/PFO	Hillside/Headwater Seep	0.78
WL-LTZ-165	15	0.182	Tussey Sink/Sleepy Creek	No	PEM	Hillside/Headwater Seep	0.77

WETLAND ID	Page Number	Acreage	Drainage Basin	EV (Trout)	Cowardin	HGM	Rapid Assessment Score
WL-LTZ-166	15	0.796	Tussey Sink/Sleepy Creek	No	PEM	Small Floodplain Bench	0.72
WL-LTZ-167	17 & 18	1.025	Sinking Creek	Yes	PEM	Hillside/Headwater Seep	N/A
WL-LTZ-168	**N/A**	**N/A**	**N/A**	**N/A**	**SKIPPED IN FIELD***	**N/A**	**N/A**
WL-LTZ-169	22	0.008	Sinking Creek	No	PEM	Hillside/Headwater Seep	0.71
WL-LTZ-170	16	0.009	Tussey Sink/Sleepy Creek	No	PEM	Small Floodplain Bench	0.84
WL-LTZ-171	11	0.015	Spring Creek	Yes	PEM	Hillside/Headwater Seep	0.87
WL-LTZ-172	11	0.034	Spring Creek	Yes	PEM	Small Floodplain Bench	0.76
WL-LTZ-173	22	0.444	Sinking Creek	No	PEM/POW	Depressional Wetland/Pond	0.79 (PEM); 0.81 (POW)

* *Wetland number was accidentally skipped during the delineations in the field*

3.1 Soils

The USDA-NRCS Web Soil Survey and Soil Survey Geographic Database (SSURGO) were used to identify the mapped soil units within the project area. Hydric ratings (major hydric soils) and hydric classification-presence (non-hydric soils which contain hydric inclusions) data were obtained through both the Web Soil Survey and the SSURGO sources and cross-referenced for consistency. The datasets revealed that there were eleven (11) major hydric soils as well as seventeen (17) non-hydric soils that contain hydric inclusions in the SCAC project area. The mapped soil units are depicted on the enclosed soil mapping (Figure 3). A summary of all the mapped soil units and their hydric inclusions is presented in Table 2 below.

As illustrated on Figure 3 and listed in Table 2, Andover, Atkins, Brinkerton, Dunning, Melvin, and Purdy were identified as mapped hydric soils within the SCAC project area. Major hydric soils Andover, Brinkerton, Dunning, Melvin, and Purdy extended across the large bottomland floodplains of the larger mainstem streams. Atkins soils were typically located along smaller tributaries and hillside locations. In Table 2, the hydric soil map units are highlighted in green and the hydric inclusion soil map units are highlighted in yellow.

TABLE 2
MAPPED SOIL SUMMARY TABLE

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
AnB	Andover channery silt loam, 0 to 8 percent slopes	Yes	No
AnC	Andover channery silt loam, 8 to 15 percent slopes	Yes	No
AoB	Andover very stony loam, 0 to 8 percent slopes	Yes	No
AoC	Andover very stony loam, 8 to 15 percent slopes	Yes	No
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Yes	No
BkB	Berks channery silt loam, 3 to 8 percent slopes	No	Markes
BkC	Berks channery silt loam, 8 to 15 percent slopes	No	Markes
BkD	Berks channery silt loam, 15 to 25 percent slopes	No	Markes
BmF	Berks and Weikert soils, 25 to 70 percent slopes	No	No
BrA	Brinkerton silt loam, 0 to 3 percent slopes	Yes	Atkins
BrB	Brinkerton silt loam, 3 to 8 percent slopes	Yes	Atkins
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Yes	Markes
BuB	Buchanan channery loam, 3 to 8 percent slopes	No	Andover
BuC	Buchanan channery loam, 8 to 15 percent slopes	No	Andover
BxB	Buchanan channery loam, 0 to 8 percent slopes, rubbly	No	Andover
BxD	Buchanan channery loam, 8 to 25 percent slopes, rubbly	No	Andover
CkA	Clarksburg silt loam, 0 to 3 percent slopes	No	Thorndale
CkB	Clarksburg silt loam, 3 to 8 percent slopes	No	Thorndale
Du	Dunning silty clay loam	Yes	Melvin
EdB	Edom silt loam, 2 to 8 percent slopes	No	No
EdC	Edom silt loam, 8 to 15 percent slopes	No	No

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
EdD	Edom silt loam, 15 to 25 percent slopes	No	No
ErB	Ernest channery silt loam, 3 to 8 percent slopes	No	Brinkerton
ErC	Ernest channery silt loam, 8 to 15 percent slopes	No	Brinkerton
HaA	Hagerstown silt loam, 0 to 3 percent slopes	No	No
HaB	Hagerstown silt loam, 3 to 8 percent slopes	No	No
HaC	Hagerstown silt loam, 8 to 15 percent slopes	No	No
HcB	Hagerstown silty clay loam, 3 to 8 percent slopes	No	No
HcC	Hagerstown silty clay loam, 8 to 15 percent slopes	No	No
HcD	Hagerstown silty clay loam, 15 to 25 percent slopes	No	No
HSD	Hazleton extremely stony sandy loam, moderately steep	No	No
HTF	Hazleton-Dekalb association, very steep	No	No
HuA	Hublersburg silt loam, 0 to 3 percent slopes	No	No
HuB	Hublersburg silt loam, 3 to 8 percent slopes	No	No
HuD	Hublersburg silt loam, 15 to 25 percent slopes	No	No
LaB	Laidig channery loam, 3 to 8 percent slopes	No	No
LaC	Laidig channery loam, 8 to 15 percent slopes	No	No
LcD	Laidig extremely stony loam, 8 to 25 percent slopes	No	No
LDF	Laidig extremely stony loam, steep	No	No
Lx	Lindside soils	No	Melvin
Mm	Melvin silt loam	Yes	No
MnB	Millheim silt loam, 2 to 8 percent slopes	No	No
MnC	Millheim silt loam, 8 to 15 percent slopes	No	No
MnD	Millheim silt loam, 15 to 25 percent slopes	No	No

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
MuA	Murrill channery silt loam, 0 to 3 percent slopes	No	No
MuB	Murrill channery silt loam, 3 to 8 percent slopes	No	No
MuC	Murrill channery silt loam, 8 to 15 percent slopes	No	No
No	Nolin silt loam, local alluvium, 0 to 5 percent slopes	No	Melvin
OhB	Opequon-Hagerstown complex, 3 to 8 percent slopes	No	No
OhC	Opequon-Hagerstown complex, 8 to 15 percent slopes	No	No
OhD	Opequon-Hagerstown complex, 15 to 25 percent slopes	No	No
ORF	Opequon-Hagerstown complex, steep	No	No
OxB	Opequon-Rock outcrop complex, 0 to 8 percent slopes	No	No
OxD	Opequon-Rock outcrop complex, 8 to 25 percent slopes	No	No
Ph	Philo loam, 0 to 3 percent slopes, occasionally flooded	No	Atkins
Pk	Philo and Atkins very stony soils	No	Atkins, Dunning
Pu	Purdy silt loam	Yes	Brinkerton
QU	Quarry	No	No
Ru	Rubble land	No	No
Ty	Tyler silt loam	No	Purdy
URB	Urban land-Hagerstown complex, gently sloping	No	No
W	Water	No	No
WeC	Weikert shaly silt loam, 5 to 15 percent slopes	No	Markes

3.2 Drainage Basins

The project area contained two primary drainage basins: Sinking Creek (east) and Spring Creek (west). The approximate divide of the drainages is located between Summer Lane (Potter Athletic Complex) and Taylor Hill Road. It should also be noted that Sleepy Creek, located between these two roadways, is associated with the Tussey Sink and does not directly connect to either Sinking Creek or Spring Creek via a surface water connection.

3.3 Trout Listings

Time-of-year restrictions for stocked trout (February 15 through June 1), wild trout (October 1 through December 31), and Class A wild trout (October 1 through April 1) are anticipated for in-stream work in numerous watercourses within the project area. Per the Pennsylvania Fish and Boat Commission (PFBC), Sinking Creek is identified as a Stocked Trout Waters through the project area and is subject to an in-stream time-of-year restriction for Stocked Trout (February 1 through June 31). Additionally, the PFBC states that crossings of tributaries within 0.5 miles of a stocked reach of stream is also subject to this time-of-year restriction. Numerous tributaries to Sinking Creek are also subject to this time-of-year restriction. Sinking Creek is identified as a stream that supports the natural reproduction of trout (i.e., a wild trout stream). Sinking Creek and its unnamed tributaries are anticipated to have an in-stream trout time-of-year restriction for wild trout (October 1 through December 31), and Spring Creek and its unnamed tributaries are anticipated to have a restriction for Class-A mixed brook/brown wild trout (October 1 through April 1). The following table, Table 3, identifies for each watercourse the channel name, page number per map sheet (Appendix A), drainage basin, flow regime with observed benthic macroinvertebrates, channel characteristics, substrate, stream pattern habitat, protected water uses, anticipated time of year restrictions, and rapid assessment scores. The orange shaded areas within the table represent those resources that are no longer within the project area.

All named (mainstem) watercourses are presented first in Table 3, with unnamed tributaries succeeding them. Existing and protected water uses for the delineated watercourses are also included in Table 3.

TABLE 3
WATERCOURSE SUMMARY TABLE

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
Mainstem Watercourses (Streams)								
Sinking Creek S-LTZ-001	17, 18, 19, 20, 21, & 22	Sinking Creek	R2UBH	Perennial; Caddisfly, Mayfly, Water Penny, Isopod	TOB: 12-40 Ft. WW: 10-35 Ft. Depth: 4-48 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.72 (Eastern); 0.76 (Western)
Sleepy Creek S-LTZ-025	14, 15, & 16	Sleepy Creek/ Tussey Sink	R4SBC	Perennial; Stonefly, Caddisfly, Midge	TOB: 1-8 Ft. WW: 1-7 Ft. Depth: 1-12+ In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run /Limited Pool	CWF, MF	0.64

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
Mainstem Watercourses (Streams)								
Boal Gap Run S-LTZ-017	21	Sinking Creek	R5UBH	Perennial; Mayfly, Caddisfly, Stonefly	TOB: 10-25 Ft. WW: 8-23 Ft. Depth: 4-10 In. w/ 24 In. pockets	Silt, Sand, Gravel, Cobble; Riffle/Run /Pool	CWF, MF Stocked Trout (February 15 - June 1) Class-A Mixed Brook/Brown Trout Fishery (October 1-April 1)	0.79
Spring Creek S-LTZ-035	2, 3, 4, 7, 11, & 12	Spring Creek	R4SBC, R5UBH	Intermittent/ Perennial ; Black Fly, Caddisfly, Mayfly, Stonefly **Portions of Spring Creek were devoid of water during the field investigations.*	TOB: 1-15 Ft. WW: 0-14 Ft. Depth: 0-24 In. **Reaches of dry bed*	Silt, Sand, Gravel, Cobble, Boulder; Riffle/Run/ Pool	HQ-CWF, MF Class-A Brown Trout (October 1-April 1)	0.54 (Int); 0.67 (Per 1) 0.63 (Per 2) 0.71 (Per 3) **Three forms are included correlating with different sections of the Spring Creek perennial reach.* .

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
Mainstem Watercourses (Streams)								
Galbraith Gap Run S-LTZ-077	3	Spring Creek	R4SBC	Perennial; Stonefly, Caddisfly	TOB: 15-30 Ft. WW: 10-25 Ft. Depth: 4-36 In. **A portion is rock/concrete lined and includes 6-foot plunges into approximately 4-foot-deep pools.*	Silt, Sand, Gravel, Cobble, Boulder;Riffle/Run/Pool	HQ-CWF, MF Class-A Brook Trout (October 1-April 1)	0.53
Cedar Run S-BPH-003 **Removed due to project area change*	N/A	Spring Creek	R4SBC	Perennial; Predatory Diving Beetle	TOB: 3-6 Ft. WW: 2-5 Ft. Depth: 3-6 In.	Silt, Limited Cobble; Riffle/Run	HQ-CWF, MF Class-A Brook Trout (October 1-April 1)	0.51

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
Unnamed Tributaries								
S-AHE-001	22	Sinking Creek	None	Perennial; Mayfly, Isopod	TOB: 2-6 Ft. WW: 1-5 Ft. Depth: 1-5 In.	Silt, Sand, Gravel; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.75
S-BPH-001	22 & 23	Sinking Creek	R4SBC	Perennial; Caddisfly, Water Penny	TOB: 4-10 Ft. WW: 3-9 Ft. Depth: 2-12 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.71
S-BPH-002	21	Sinking Creek	None	Ephemeral/ Perennial; Black Fly, Water Penny	TOB: 1-3 Ft. WW: 1-3 Ft. Depth: 1-2 In.	Silt, Sand, Gravel; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Class-A Mixed Brook/Brown Trout Fishery (October 1-April 1)	0.61

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
Unnamed Tributaries								
S-BPH-004	17	Sinking Creek	None	Intermittent; Planaria	TOB: 3 Ft. WW: 0-1 Ft. Depth: 0-1 In.	Silt, Limited Gravel; Pool	CWF, MF	0.55
S-BPH-005	18	Sinking Creek	None	Perennial; None **Perennial due to strong flow and connection to WL-LTZ-030-PEM.*	TOB: 3 Ft. WW: 0-1 Ft. Depth: 0-1 In.	Silt, Cobble;Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.66
S-CML-001	8	Spring Creek	None	Intermittent; Midge **Subsurface upon reaching adjacent fill pile*	TOB: 2-3 Ft. WW: 1-2 Ft. Depth: 0- <1 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF	0.83
S-CML-002	12	Spring Creek	None	Perennial; Caddisfly, Stonefly	TOB: 2-5 Ft. WW: 2-4 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.86
S-CML-003	11 & 12	Spring Creek	None	Perennial; Caddisfly, Snail	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 0-1 In.	Silt, Sand, Limited Gravel & Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.89

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-CML-004	11	Spring Creek	None	Ephemeral; **No organisms observed*	TOB: 1-2 Ft. WW: N/A Depth: N/A	Silt, Sand, Limited Gravel; N/A	CWF, MF	N/A
S-CML-005	11	Spring Creek	None	Perennial; Mayfly, Caddisfly	TOB: 1-3 Ft. WW: 1-2 In. Depth: 1-3 In.	Silt, Sand, Limited Gravel & Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.79
S-CML-006	11	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 1-2 Ft. WW: 4-12 In. Depth: 0- <1 In.	Silt, Sand, Limited Cobble; Limited Pool	CWF, MF	0.82
S-CML-007	11	Spring Creek	None	Intermittent; Caddisfly	TOB: 1-2 Ft. WW: 6-12 In. Depth: 0- <1 In.	Silt Sand, Gravel, Cobble; Run, Pool	CWF, MF	0.58
S-CML-008	11	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 1-4 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Cobble; N/A	CWF, MF	0.40
S-CML-009	7 & 8	Spring Creek	None	Intermittent/ Perennial; Caddisfly, Mayfly	TOB: 2-5 Ft. WW: 0-3 Ft. Depth: 0-1 In. **Were only pockets of water in the upstream intermittent section.*	Silt, Sand, Gravel, Cobble, Limited Boulder; **Boulders appear to have been placed by landowner* Riffle/Run /Limited Pool	CWF, MF	0.72 (Int); 0.74 (Per)

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-CML-010	2	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 2-3 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Cobble; N/A	CWF, MF Class-A Brown Trout (October 1-April 1)	0.80
S-CML-011	2	Spring Creek	R4SBC	Intermittent; Caddisfly	TOB: 4-7 Ft. WW: 3-5 Ft. Depth: 2-5 In.	Silt, Sand, Gravel, Cobble; Riffle/Run/ Pool	CWF, MF Class-A Brown Trout (October 1-April 1)	0.66
S-DJW-001	12	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 2-4 Ft. WW: N/A Depth: N/A	Silt, Gravel, Cobble; N/A	CWF, MF	0.74
S-LTZ-002	23	Sinking Creek	None	Intermittent/ Perennial; Caddisfly	TOB: 1 Ft. WW: 4-8 In. Depth: 0-1 In.	Silt, Sand; Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.50
S-LTZ-003	22	Sinking Creek	None	Intermittent; **No organisms observed*	TOB: 1-4 Ft. WW: 0-4 In. Depth: 0- <1 In.	Silt, Bare Earth; Run	CWF, MF	0.68
S-LTZ-004	23	Sinking Creek	None	Intermittent; Black Fly **Channel had strong flow, but only one taxon was observed.*	TOB: 3-5 Ft. WW: 1-4 Ft. Depth: 1-4 In.	Silt, Sand, Gravel, Cobble; Riffle/Run/ Pool	CWF, MF	0.75

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-005	23	Sinking Creek	None	Intermittent; **No organisms observed*	TOB: 2-5 Ft. WW: 6-36 In. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble;Riffle/Run/Pool	CWF, MF	0.75
S-LTZ-006	23	Sinking Creek	None	Perennial; Caddisfly, Snail, Isopod, Planaria	TOB: 5-12 Ft. WW: 3-10 Ft. Depth: 2-6 In.	Silt, Sand, Gravel, Cobble; Riffle/Run/ Pool	CWF, MF Wild Trout (October 1- December 31)	0.74
S-LTZ-007	23	Sinking Creek	None	Perennial; Isopod, Snail, Planaria	TOB: 1-5 Ft. WW: 1-4 Ft. Depth: 1-3 In.	Silt, Sand, Limited Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1- December 31)	0.74
S-LTZ-008	20	Sinking Creek	None	Intermittent; **No organisms observed*	TOB: 3-5 Ft. WW: 1-4 Ft. Depth: <1-2 In. **6-inch deep pool at culvert outlet*	Silt, Sand, Gravel, Limited Cobble; Riffle/Run/ Pool	CWF, MF	0.78

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-009	20	Sinking Creek	None	Intermittent; **No organisms observed*	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 1-3 In.	Silt; Run	CWF, MF	0.63
S-LTZ-010	20	Sinking Creek	R4SBC, R2UBH	Perennial; Midge, Snail, Planaria	TOB: 3-10 Ft. WW: 3-8 Ft. Depth: 1-8 In.	Silt, Sand, Gravel; Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.75
S-LTZ-011	20	Spring Creek	None	Ephemeral; **No organisms observed*	TOB: 1 Ft. WW: N/A Depth: N/A	Silt, Gravel; N/A	CWF, MF	N/A
S-LTZ-012	21	Sinking Creek	None	Ephemeral; **No organisms observed*	TOB: 2-4 Ft. WW: N/A Depth: N/A	Gravel, Bare Earth; N/A	CWF, MF	N/A
S-LTZ-013	23	Sinking Creek	None	Ephemeral; **No organisms observed*	TOB: 1-4 Ft. WW: N/A Depth: N/A	Gravel, Limited Cobble, Bare Earth;N/A	CWF, MF	N/A
S-LTZ-014	21	Sinking Creek	None	Ephemeral; **No organisms observed*	TOB: 1-4 Ft. WW: N/A Depth: N/A	Silt, Sand; N/A	CWF, MF	N/A

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-015	20 & 21	Sinking Creek	PEM1A	Perennial; Black Fly, Snail **Small section of the uppermost part of the stream was called ephemeral due to lack of flow.*	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 1-3 In.	Silt, Sand, Gravel; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.76
S-LTZ-016	20	Sinking Creek	None	Perennial ; Black Fly, Midge	TOB: 2-3 Ft. WW: 1-2 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.51
S-LTZ-018	21	Sinking Creek	None	Perennial; Caddisfly, Midge	TOB: 1-3 Ft. WW: 1-3 Ft. Depth: 1-3 In.	Silt, Gravel, Rip-Rap; Riffle/Run/ Pool	CWF, MF Stocked Trout (February 15 - June 1) Class-A Mixed Brook/Brown Trout Fishery (October 1-April 1)	0.53

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-019	21	Sinking Creek	None	Perennial; Black Fly, Snail, Planaria	TOB: 2-3 Ft. WW: 1-2 Ft. Depth: 1-3 In.	Silt, Gravel, Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Class-A Mixed Brook/Brown Trout Fishery (October 1-April 1)	0.52
S-LTZ-020	21	Sinking Creek	None	Perennial; Caddisfly, Mayfly	TOB: 2-3 Ft. WW: 1-2 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Limited Cobble;Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.83
S-LTZ-021	21	Sinking Creek	R4SBC	Perennial; Stone Fly, Snail	TOB: 5-8 Ft. WW: 4-6 Ft. Depth: 1-4 In.	Silt, Sand, Limited Cobble; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Class-A Mixed Brook/Brown Trout Fishery (October 1-April 1)	0.83
S-LTZ-022	20	Sinking Creek	None	Ephemeral; *No organisms observed*	TOB: 1-2 Ft. WW: N/A Depth: N/A	Silt, Gravel; N/A	CWF, MF	N/A

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-023	14, 17, & 18	Sinking Creek	R4SBC	Perennial; Caddisfly, Midge	TOB: 1-4 Ft. WW: 1-3 Ft. Depth: 2-8 In.	Silt, Sand; Riffle/Run/Pool	CWF, MF	0.56
S-LTZ-024	18	Sinking Creek	None	Ephemeral; *No organisms observed	TOB: 0-1 Ft. WW: 0-6 In. Depth: 0- <1 In.	Silt; Run	CWF, MF	N/A
S-LTZ-026	8	Spring Creek	None	Ephemeral; *No organisms observed	TOB: 1-2 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel; N/A	CWF, MF	N/A
S-LTZ-027	15	Sleepy Creek/ Tussey Sink	None	Intermittent/ Perennial; *No organisms observed	TOB: 1-6 Ft. WW: 6-28 In. Depth: 1-2 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF	0.57 (Int) ; 0.43 (Per)
S-LTZ-028	15	Sleepy Creek/ Tussey Sink	None	Perennial; Mayfly, Caddisfly	TOB: 5-8 Ft. WW: 2-6 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF	0.61
S-LTZ-029	11	Spring Creek	None	Perennial; Caddisfly, Black Fly	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 1-4 In.	Silt, Sand, Limited Gravel; Riffle/Run	CWF, MF	0.78
S-LTZ-030	18	Sinking Creek	None	Perennial; Snail, Midge	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 2-6 In.	Silt, Sand, Limited Gravel; Riffle/Run	CWF, MF Wild Trout (October 1-December 31)	0.61
S-LTZ-031	15 & 16	Sinking Creek	R4SBC	Perennial; Caddisfly, Stonefly, Mayfly, Flatworm	TOB: 4-12 Ft. WW: 3-10 Ft. Depth: 1-12 In.	Silt, Sand, Gravel, Cobble, Limited Boulder;Riffle/Run/Pool	CWF, MF	0.70

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-032	16	Sinking Creek	None	Intermittent; **No organisms observed*	TOB: 1-5 Ft. WW: 1-3 Ft. Depth: 1-6 In.	Silt, Sand, Limited Gravel; Run	CWF, MF Wild Trout (October 1-December 31)	0.82
S-LTZ-033	33	Sinking Creek	None	Perennial; Snail, Caddisfly	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 2-6 In.	Silt, Sand, Gravel; Riffle/Run	CWF, MF Wild Trout (October 1-December 31)	0.64
S-LTZ-034	18	Sinking Creek	None	Perennial; Snail, Isopod	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 2-4 In.	Silt, Sand, Limited Gravel; Riffle/Run	CWF, MF Wild Trout (October 1-December 31)	0.70
S-LTZ-036	18	Sinking Creek	None	Ephemeral; **No organisms observed*	TOB: 8-12 In. WW: 6-10 In. Depth: 0- <1 In.	Silt; Limited Pool	CWF, MF	N/A
S-LTZ-037	19	Sinking Creek	None	Perennial; Caddisfly, Midge	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 2-4 In.	Silt, Sand; Riffle/Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1-December 31)	0.64
S-LTZ-038	3	Spring Creek	R4SBC, R5UBH	Perennial; Snail, Black Fly	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 2-6 In.	Silt, Sand, Gravel; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.61

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-039	5	Spring Creek	None	Perennial; Caddisfly, Black Fly, Snail **Goes subsurface*	TOB: 2-4 Ft. WW: 2-3 Ft. Depth: 1-4 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF	0.70
S-LTZ-040	11	Spring Creek	None	Perennial; Caddisfly, Stonefly, Planaria	TOB: 2-12 Ft. WW: 2-11 Ft. Depth: 2-6 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.79
S-LTZ-041	11	Spring Creek	None	Perennial; Caddisfly, Stonefly	TOB: 3-8 Ft. WW: 3-7 Ft. Depth: 2-4 In.	Silt, Sand, Gravel, Cobble;Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.79
S-LTZ-042	11	Spring Creek	None	Perennial; Isopod, Caddisfly, Mayfly, Black Fly	TOB: 2-3 Ft. WW: 1-3 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.79
S-LTZ-043	11	Spring Creek	None	Intermittent/ Perennial; Caddisfly, Isopod, Mayfly	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 1-3 In. **Upper section of watercourse lacked adequate flow; only possessed pools*.	Silt, Sand, Gravel, Cobble; Riffle/Run/Pool	CWF, MF Class-A Brown Trout (October 1-April 1)	0.80 (Int); 0.72 (Per)

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-044	11	Spring Creek	None	Intermittent; Snail, Stonefly **Watercourse was identified as intermittent due to limited flow. Watercourse goes subsurface.*	TOB: 2-3 Ft. WW: 1-2 Ft. Depth: 0-2 In.	Silt, Gravel; Riffle/Pool	CWF, MF	0.73
S-LTZ-045	11 & 12	Spring Creek	None	Perennial; Caddisfly, Stonefly, Midge	TOB: 1-8 Ft. WW: 1-6 Ft. Depth: 2-6 In.	Silt, Sand, Gravel, Cobble, Limited Boulder; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.72
S-LTZ-046	11	Spring Creek	None	Perennial; Caddisfly, Predatory Diving Beetle	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 1-4 In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.75
S-LTZ-047	11	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 0-3 In. **Portions go subsurface.*	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.46
S-LTZ-048	11	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 2-4 Ft. WW: N/A Depth: N/A	Silt; N/A	CWF, MF	0.73
S-LTZ-049	8 & 12	Spring Creek	None	Intermittent; **No organisms observed. Watercourse goes diffuse.*	TOB: 3-5 Ft. WW: 3-4 Ft. Depth: 0-1 In.	Silt, Gravel, Cobble;Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.78

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-050	7 & 8	Spring Creek	None	Perennial; Mayfly, Caddisfly	TOB: 2-5 Ft. WW: 2-4 Ft. Depth: 1-6 In.	Silt, Sand, Gravel, Cobble, Limited Boulder; Riffle/Run	CWF, MF	0.77
S-LTZ-051	8	Spring Creek	None	Ephemeral/ Intermittent; Caddisfly	TOB: 1-4 Ft. WW: 1-3 Ft. Depth: 1-2 In. **Portion upstream of wetland was identified as ephemeral.*	Silt, Sand, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	N/A (Eph); 0.79 (Int)
S-LTZ-052	8	Spring Creek	None	Perennial; Mayfly, Caddisfly	TOB: 2-6 Ft. WW: 1-4 Ft. Depth: 1-2 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.82
S-LTZ-053	8	Spring Creek	None	Perennial; Mayfly, Caddisfly	TOB: 1-3 Ft. WW: 1-2 Ft. Depth: 0-4 In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.80
S-LTZ-054	8	Spring Creek	None	Perennial; Stonefly, Caddisfly	TOB: 3-10 Ft. WW: 3-8 Ft. Depth: 1-6 In.	Silt, Sand, Gravel, Cobble, Limited Boulder; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.77
S-LTZ-055	8	Spring Creek	None	Perennial; Stonefly (2 Taxa)	TOB: 3-5 Ft. WW: 1-3 Ft. Depth: 0-2 In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.74

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-056	8	Spring Creek	None	Perennial; Stonefly, Caddisfly, Riffle Beetle	TOB: 3-6 Ft. WW: 2-4 Ft. Depth: 1-4 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.74
S-LTZ-057	8	Spring Creek	None	Intermittent; *No organisms observed	TOB: 2-3 Ft. WW: N/A Depth: N/A	Silt, Sand, Limited Cobbl;N/A	CWF, MF Class-A Brown Trout (October 1-April 1)	0.76
S-LTZ-058	7 & 8	Spring Creek	R4SBC	Perennial; Isopod, Stonefly, Caddisfly	TOB: 2-6 Ft. WW: 1-5 Ft. Depth: <1-4 In.	Silt, Sand, Gravel, Cobble; Riffle/Run /Limited Pool	CWF, MF Class-A Brown Trout (October 1-April 1)	0.77
S-LTZ-059	8	Spring Creek	None	Perennial; Stonefly, Mayfly	TOB: 3-6 Ft. WW: 1-5 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.70
S-LTZ-060	8	Spring Creek	None	Perennial; Stonefly, Diptera	TOB: 2-4 Ft. WW: 1-3 Ft. Depth: 1-2 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.76
S-LTZ-061	16	Sleepy Creek/ Tussey Sink	None	Perennial; Mayfly, Caddisfly	TOB: 1 Ft. WW: 8-10 In. Depth: 1-2 In.	Silt, Sand, Limited Cobble; Riffle/Run	CWF, MF	0.72
S-LTZ-062	7 & 8	Spring Creek	None	Intermittent; *No organisms observed	TOB: 2-4 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Cobble; NA	CWF, MF Class-A Brown Trout (October 1-April 1)	0.76

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-063	8	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 1-4 Ft. WW: 6-24 In. Depth: 0- <1 In.	Silt, Sand, Gravel, Cobble; Limited Pool	CWF, MF Class-A Brown Trout (October 1-April 1)	0.78
S-LTZ-064	8	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 1-4 Ft. WW: 0-2 Ft. Depth: 0-1 In. **4 to 6-inch deep near springhouse*	Silt, Sand, Gravel, Limited Boulder; Riffle/Run/ Pool	CWF, MF	0.64
S-LTZ-065	7, 8, & 12	Spring Creek	R4SBC	Intermittent/ Perennial; Stonefly, Black Fly, Caddisfly	TOB: 3-6 Ft. WW: 6-48 In. Depth: <1-2 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.77 (Int); .66 (Per)
S-LTZ-066	12	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 2-3 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Limited Cobble; N/A	CWF, MF Class-A Brown Trout (October 1-April 1)	0.79
S-LTZ-067	8 & 12	Spring Creek	None	Intermittent/ Perennial; Caddisfly, Mayfly, Stonefly	TOB: 2-6 Ft. WW: 1-4 Ft. Depth: 1-2 In. **A portion goes subsurface.*	Silt, Sand, Gravel, Cobble;Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.78 (Int); 0.75 (Per)
S-LTZ-068	12	Spring Creek	None	Perennial; Caddisfly, Mayfly	TOB: 2-4 Ft. WW: 1-2 Ft. Depth: 1 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.75
S-LTZ-069	12	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 2-4 Ft. WW: N/A Depth: N/A	Silt; N/A	CWF, MF	0.77

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-070	4 & 5	Spring Creek	R4SBC	Intermittent; **No organisms observed*	TOB: 3-6 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Cobble; N/A	CWF, MF Class-A Brown Trout (October 1-April 1)	0.49
S-LTZ-071	5	Spring Creek	None	Intermittent; **No organisms observed*	TOB: 3-6 Ft. WW: N/A Depth: N/A	Silt, Sand, Gravel, Limited Cobble; N/A	CWF, MF Class-A Brown Trout (October 1-April 1)	0.59
S-LTZ-072	5	Spring Creek	None	Ephemeral; **No organisms observed*	TOB: 1-2 Ft. WW: N/A Depth: N/A	Silt, Gravel, Limited Cobble; N/A	HQ-CWF, MF	N/A
S-LTZ-073	4 & 5	Spring Creek	R4SBC	Perennial; Caddisfly, Snail	TOB: 2-5 Ft. WW: 1-3 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.66
S-LTZ-074	3	Spring Creek	None	Perennial/ Intermittent; Black Fly, Planaria	TOB: 3-5 Ft. WW: 2-3 Ft. Depth: 1-3 In. **Lower half was identified as intermittent due to lack of water. This portion receives overflow from the perennial section.*	Silt, Sand, Gravel, Cobble; Riffle/Run /Limited Pool	CWF, MF Class-A Brown Trout (October 1-April 1)	0.57
S-LTZ-075	5	Spring Creek	R4SBC	Perennial; Scud, Black Fly, Blood Worm	TOB: 3-5 Ft. WW: 1-4 Ft. Depth: 3-6 In.	Silt, Sand, Gravel, Cobble;Riffle/Run	CWF, MF Class-A Brown Trout (October 1-April 1)	0.67

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-076	16	Sleepy Creek/ Tussey Sink	None	Perennial; Caddisfly, Mayfly	TOB: 1-4 Ft. WW: 1-4 Ft. Depth: 1-5 In.	Silt, Sand, Gravel Limited Cobble; Riffle/Run	CWF, MF	0.75
S-LTZ-078	7 & 8	Spring Creek	None	Intermittent; *No organisms observed*	TOB: 2-4 Ft. WW: 2-3 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1- April 1)	0.79
S-LTZ-079	7	Spring Creek	None	Perennial/ Ephemeral; Caddisfly, Stonefly *Portions with flowing water had two taxa. Other areas were dry.*	TOB: 3-5 Ft. WW: 3-4 Ft. Depth: 2-6 In. *The uppermost section lacked water and was identified as ephemeral.*	Silt, Sand, Limited Cobble; Riffle/Run /Limited Pool	CWF, MF Class-A Brown Trout (October 1- April 1)	N/A (Eph); 0.70 (Per)
S-LTZ-080	7	Spring Creek	None	Intermittent; Caddisfly, Stonefly	TOB: 3-5 Ft. WW: 1-4 Ft. Depth: 1-3 In.	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF Class-A Brown Trout (October 1- April 1)	0.65
S-LTZ-081	19	Sinking Creek	None	Perennial; Midge, Caddisfly	TOB: 2 Ft. WW: 1 Ft. Depth: 2 In.	Silt, Gravel; Run	CWF, MF Stocked Trout (February 15 - June 1) Wild Trout (October 1- December 31)	0.64

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-082	3	Spring Creek	None	Perennial; Black Fly, Midge	TOB: 2 Ft. WW: 1 Ft. Depth: 2 In.	Gravel, Cobble, Concrete; Riffle/Run	HQ-CWF, MF Class-A Brook Trout (October 1-April 1)	0.34
S-LTZ-090	15 & 16	Sleepy Creek/ Tussey Sink	None	Ephemeral; *No organisms observed*	TOB: 1-5 Ft. WW: 8-30 In. Depth: 1-3 In. *Heavy rain prior to visit. Watercourse was dry before rain.*	Silt, Sand, Gravel, Cobble; Riffle/Run	CWF, MF	N/A
S-LTZ-091	11	Spring Creek	None	Intermittent; *No organisms observed*	TOB: 2 Ft. WW: N/A Depth: N/A *Watercourse was mostly dry.*	Silt, Sand, Gravel, Cobble;N/A	CWF, MF	0.74
S-LTZ-092	15	Sinking Creek	None	Perennial; Caddisfly, Snail	TOB: 1-3 Ft. WW: 10-24 In. Depth: 1-2 In.	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF Wild Trout (October 1-December 31)	0.82

Channel	Page Number	Drainage Basin	NWI	Flow Regime & Macro-invertebrates Observed	Characteristics (Top-of-Bank, Wetted Width, Depth)	Substrates and Habitat	Protected Water Uses & Trout Time-of-Year Restrictions	Rapid Assessment Score
S-LTZ-095	15	Sleepy Creek/ Tussey Sink	None	Perennial; Caddisfly, Blackfly	TOB: 2-4 Ft. WW: 1-3 Ft.. Depth: 2-5 In.	Silt, Sand, Gravel, Limited Cobble; Run with limited riffle	CWF, MF	0.61
S-LTZ-100	22	Sinking Creek	None	Intermittent; *No organisms observed*	TOB: 1 Ft. WW: 4-6 In. Depth: 1 In. *Appears to be fueled by groundwater seep*	Silt, Sand, Gravel, Limited Cobble; Riffle/Run	CWF, MF	0.53

3.4 Stormwater

Numerous stormwater features, including stormwater wetlands, stormwater conveyances, and stormwater retention basins, were identified within the project area. These stormwater resources were determined to be constructed in uplands based on in-field observations of their landscape positions as well as a review of historic aerial imagery. Maintained stormwater systems are not typically regarded as federally jurisdictional resources, and *PA Code Chapter 105.12(a)(6)*, also known as Waiver 6, waives the requirement for permit authorization regarding water obstructions or encroachments located in, along, across, or projecting into a stormwater management facility if the facility was constructed and continues to be maintained for the designated purpose. Additionally, based on the programmatic agreement between the PA DEP and the USACE under the Pennsylvania State Programmatic General Permit-6 (PASPGP-6), Waiver 6-eligible features are also considered non-reporting and non-regulated under Section 404.

3.5 Vegetative and Hydrogeomorphic Classes

Delineated wetlands (Table 1) were determined to include a range of vegetative and hydrogeomorphic classes. As part of the Functional Assessment, the wetlands were generally grouped into the following categories: large floodplain systems (greater than or equal to 0.5 acre), small floodplain benches (less than 0.5 acre), ponds, hillside/headwater seeps, mesic/farmland wetlands, and depressional wetlands. The depressional wetlands were identified as resources that were separated (not-connected) from other aquatic resources.

Watercourses (Table 3) were classified by flow regime, as determined in the field (i.e., ephemeral, intermittent, and perennial). All named (mainstem) watercourses are presented first in Table 3, with unnamed tributaries succeeding them. Existing and protected water uses for the delineated watercourses are also included in Table 3.

3.6 Functional and Rapid Assessments

PA DEP's July 2017 – PA Wetland and Riverine Condition Level 2 RAP's were used to assess each of the delineated wetlands and intermittent and perennial watercourses. The Overall Condition Index scores for wetlands and watercourses were generally optimal and suboptimal, averaging 0.70 and 0.76, respectively. The Rapid Assessment Data Forms are included in Appendices F and G.

In addition to the Level 2 Rapid Assessment, an abbreviated Function-Value evaluation of wetlands was performed. Given the shared characteristics of the wetlands within each hydrogeomorphic group, as well as similarities in the functions and values they provide, one Functional Assessment Form was completed for each group. The *USACE New England Division's Highway Methodology Workbook Supplement Descriptive Method – Wetland Functions and Values: A Descriptive Method* was used to assess the functions and values of the delineated wetlands. The USACE Descriptive Approach identifies 13 principal functions. Further descriptions for the principal functions of the wetlands are presented in the Wetland Function-Value Forms included in Appendix C.

Table 4 identifies the different functional groups of wetlands with the project area and the principal functions and values that each group exhibit.

TABLE 4
WETLAND FUNCTIONAL ASSESSMENT SUMMARY TABLE

FUNCTIONAL CLASSIFICATION	PRINCIPAL FUNCTIONS AND VALUES
Large Floodplain Wetlands	Groundwater Recharge/Discharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Production Export, Sediment/Shoreline Stabilization, Wildlife Habitat
Small Floodplain Bench Wetlands	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Sediment/Shoreline Stabilization,
Hillside/Headwater Seep Wetlands	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat
Mesic/Farmland Wetlands	Sediment/Toxicant Retention, Nutrient Removal
Depressional Wetlands	Sediment/Toxicant Retention, Nutrient Removal
Ponds	Floodflow Alteration, Fish and Shellfish Habitat, Sediment/Toxicant Retention, Wildlife Habitat, Recreation

3.7 Jurisdictional Wetlands

Per the Supreme Court of the United States (SCOTUS) decision on the Sackett case, and further guidance from the EPA in the March 12, 2025, *Memorandum Concerning the Proper Implementation of "Continuous Surface Water Connection" Under the Definition of "Waters of the United States" Under the Clean Water Act*, federal regulation of wetlands (Jurisdiction) is considered for any resources that are Abutting (i.e., connected) to Waters of the United States (WOTUS) or to Relatively Permanent Waters (RPW) that drain to WOTUS. The jurisdictional wetlands table (Table 5) summarizes these abutting and non-abutting resources delineated through the project area.

TABLE 5
JURISDICTIONAL WETLANDS TABLE

Abutting	Non-Abutting
	WL-BPH-001_PEM
WL-BPH-002_PEM/PSS/PFO/POW	
	WL-BPH-003_PEM
WL-BPH-004_PEM	
WL-BPH-005_PEM	
WL-BPH-006_PEM/PSS/PFO	
WL-BPH-007_PSS	
WL-BPH-008_PSS	
WL-BPH-009_PSS	
WL-BPH-010_PEM/PSS	
WL-BPH-011_PEM	
WL-BPH-012_PEM/PSS	
WL-BPH-013_PEM/PSS	
WL-BPH-014_PEM	
WL-BPH-015_PEM/PFO	
	WL-BPH-016_PEM
WL-BPH-017_PEM	
WL-BPH018_PEM	
WL-BPH-019_PEM	
WL-BPH-020_PEM	
WL-BPH-021_PEM	
WL-BPH-022_PEM	
WL-BPH-023_PEM	
WL-BPH-024_PEM	
	WL-BPH-025_PEM
WL-CML-001_PEM/PSS/POW	
WL-CML-002_PEM	
WL-CML-003_PEM	
WL-CML-004_PEM	
WL-CML-005_PSS	
WL-CML-006_PEM	
WL-CML-007_PSS	
WL-CML-008_PSS	
WL-CML-009_PEM/PSS	

Abutting	Non-Abutting
WL-CML-010_PEM	
WL-CML-011_PEM	
WL-CML-012_PEM	
WL-CML-013_PEM	
WL-CLM-014_PEM	
WL-CML-015_PEM	
WL-CML-016_PEM	
WL-CML-017_PEM/POW	
WL-CML-018_PSS	
WL-CML-019_PEM	
WL-CML-020_PEM	
	WL-DJW-001_PEM
	WL-DJW-002_PEM
WL-DJW-003_PEM	
WL-DJW-004_PEM	
WL-DJW-005_PEM	
WL-LTZ-001_PEM/PSS	
WL-LTZ-002_PSS	
WL-LTZ-003_PSS	
	WL-LTZ-004_PEM
	WL-LTZ-005_PEM
WL-LTZ-006_PEM	
WL-LTZ-007_PEM	
WL-LTZ-008_PEM/PSS/POW	
WL-LTZ-009_PSS	
WL-LTZ-010_PEM/PSS	
WL-LTZ-011_PEM/PSS/PFO/POW	
WL-LTZ-012_PEM	
WL-LTZ-013_PSS	
WL-LTZ-014_PFO	
WL-LTZ-015_PFO	
WL-LTZ-016_PEM/PSS	
WL-LTZ-017_PSS	
WL-LTZ-018_PFO	
WL-LTZ-019_PEM	
WL-LTZ-020_PEM/PSS/PFO	
	W-LTZ-021-PEM/PSS

Abutting	Non-Abutting
	WL-LTZ-022_PEM/POW
WL-LTZ-023_PEM/POW	
WL-LTZ-024_PEM	
	WL-LTZ-025-PEM
	WL-LTZ-026_PEM
WL-LTZ-027_PEM	
WL-LTZ-028_PEM/PSS/POW	
WL-LTZ-029_PEM	
WL-LTZ-030_PEM/PSS/PFO	
WL-LTZ-031_PEM/PSS	
	WL-LTZ-032_PEM
WL-LTZ-033_PEM	
WL-LTZ-034_PEM/PSS	
WL-LTZ-035_PEM/PSS/PFO	
WL-LTZ-036_PEM/PSS	
	WL-LTZ-037_POW
WL-LTZ-038_PEM	
WL-LTZ-039_PEM	
WL-LTZ-040_PEM	
WL-LTZ-041_PEM	
WL-LTZ-042_PEM/PFO	
WL-LTZ-043_PEM/PSS/PFO/POW	
	WL-LTZ-044_POW
	WL-LTZ-045_PEM/PSS
	WL-LTZ-046_PEM
	WL-LTZ-047_PEM/POW
	WL-LTZ-048_PSS
WL-LTZ-049_PEM/POW	
WL-LTZ-050_PEM/PSS	
WL-LTZ-051_PEM	
WL-LTZ-052_PEM/PSS	
WL-LTZ-053_PEM/PSS/POW	
WL-LTZ-054_PEM/PSS/POW	
	WL-LTZ-055_PEM
WL-LTZ-056_PEM	
	WL-LTZ-057_PEM
WL-LTZ-058_PEM	

Abutting	Non-Abutting
WL-LTZ-059_PEM/PSS	
	WL-LTZ-060_POW
	WL-LTZ-061_POW
WL-LTZ-062_PEM/PSS	
	WL-LTZ-063_POW
WL-LTZ-064_PEM	
WL-LTZ-065_PEM/PSS	
	WL-LTZ-066_POW
WL-LTZ-067_PEM/PSS	
WL-LTZ-068_PEM	
WL-LTZ-069_PEM	
WL-LTZ-070_PEM/POW	
WL-LTZ-071_PEM	
WL-LTZ-073_PEM/PSS/PFO/POW	
	WL-LTZ-074_PEM
	WL-LTZ-075_PEM
WL-LTZ-076_PEM	
WL-LTZ-077_PEM	
WL-LTZ-078_PEM	
WL-LTZ-079_PEM/PSS/PFO	
	WL-LTZ-080_PEM
WL-LTZ-081_PEM	
WL-LTZ-082_PEM/POW	
WL-LTZ-083_PEM	
	WL-LTZ-084_PEM
WL-LTZ-085_PEM/PSS	
WL-LTZ-086_PEM	
WL-LTZ-087_PEM	
	WL-LTZ-088_PEM
	WL-LTZ-089_PEM
WL-LTZ-090_PEM	
WL-LTZ-091_PEM	
WL-LTZ-092_PEM/PSS/POW	
WL-LTZ-093_PEM/PSS	
WL-LTZ-094_PEM	
WL-LTZ-095_PEM/PSS	

Abutting	Non-Abutting
WL-LTZ-096_PEM	
WL-LTZ-097_PEM	
WL-LTZ-098_PEM	
WL-LTZ-099_PEM	
WL-LTZ-100_PEM	
WL-LTZ-101_PEM	
WL-LTZ-102_PEM	
	WL-LTZ-103_POW
WL-LTZ-104_PEM	
	WL-LTZ-105_PEM
	WL-LTZ-106_PEM
WL-LTZ-107_PEM	
WL-LTZ-108_PEM/PSS	
WL-LTZ-109_PEM/PSS	
WL-LTZ-110_PEM/PSS	
WL-LTZ-112_PEM	
	WL-LTZ-113_PEM
WL-LTZ-114_PEM	
	WL-LTZ-115_PEM
WL-LTZ-116_PEM/PSS	
	WL-LTZ-117_PEM
WL-LTZ-118_PSS	
	W-LTZ-119_POW
WL-LTZ-120_PEM	
	WL-LTZ-121_POW
	WL-LTZ-122_PEM
WL-LTZ-123_PEM	
WL-LTZ-124_PEM	
	WL-LTZ-125_POW
	WL-LTZ-126_POW
	WL-LTZ-127_PEM
WL-LTZ-128_PEM/POW	
	WL-LTZ-129_PEM/POW
	WL-LTZ-130_PEM
WL-LTZ-131_PEM/PSS	

Abutting	Non-Abutting
WL-LTZ-132_PEM/PSS	
	WL-LTZ-133_PEM
	WL-LTZ-134_PEM
WL-LTZ-135_PEM	
	WL-LTZ-136_PEM
	WL-LTZ-137_PEM/POW
WL-LTZ-138_PEM	
	WL-LTZ-139_PEM
WL-LTZ-140_PEM	
WL-LTZ-141_PEM	
	WL-LTZ-142_PEM
WL-LTZ-143_PEM	
	WL-LTZ-144_PEM
WL-LTZ-145_PEM/POW	
WL-LTZ-146_PEM/POW	
WL-LTZ-147_PEM	
WL-LTZ-148_PEM/PSS/POW	
WL-LTZ-149-PEM	
	WL-LTZ-150_POW
WL-LTZ-151_POW	
WL-LTZ-152_PEM/POW	
	WL-LTZ-153_PEM
WL-LTZ-154_PEM	
WL-LTZ-155_PEM	
WL-LTZ-156_PEM	
WL-LTZ-157_PEM/PSS/PFO	
WL-LTZ-158_PEM	
WL-LTZ-159_PEM/PSS/PFO	
	WL-LTZ-160_PEM
	WL-LTZ-161_PEM
WL-LTZ-162_PEM/PSS	
WL-LTZ-163_PEM	
WL-LTZ-164-PEM/PSS/PFO	
WL-LTZ-165_PEM	
WL-LTZ-166_PEM	
WL-LTZ-167_PEM	

Abutting	Non-Abutting
	WL-LTZ-169_PEM
WL-LTZ-170_PEM	
WL-LTZ-171_PEM	
WL-LTZ-172_PEM	
	WL-LTZ-173_PEM/POW

4.0 Summary

Two hundred eighteen (218) wetlands and one hundred four (104) watercourses were delineated in the State College Area Connector project area. Time-of-year restrictions for stocked trout (February 15 through June 1), wild trout (October 1 through December 31), and Class A wild trout (October 1 through April 1) are anticipated for in-stream work in numerous watercourses in the project area, as identified in Table 3. Due to the extent of wild trout streams that extend across the project area, the majority of the wetlands are anticipated to be regulated as Exceptional Value wetlands based upon their respective floodplain locations (*PA DEP Chapter 105.17*). The resumes of the field investigation team are included as Appendix G.

List of Preparers

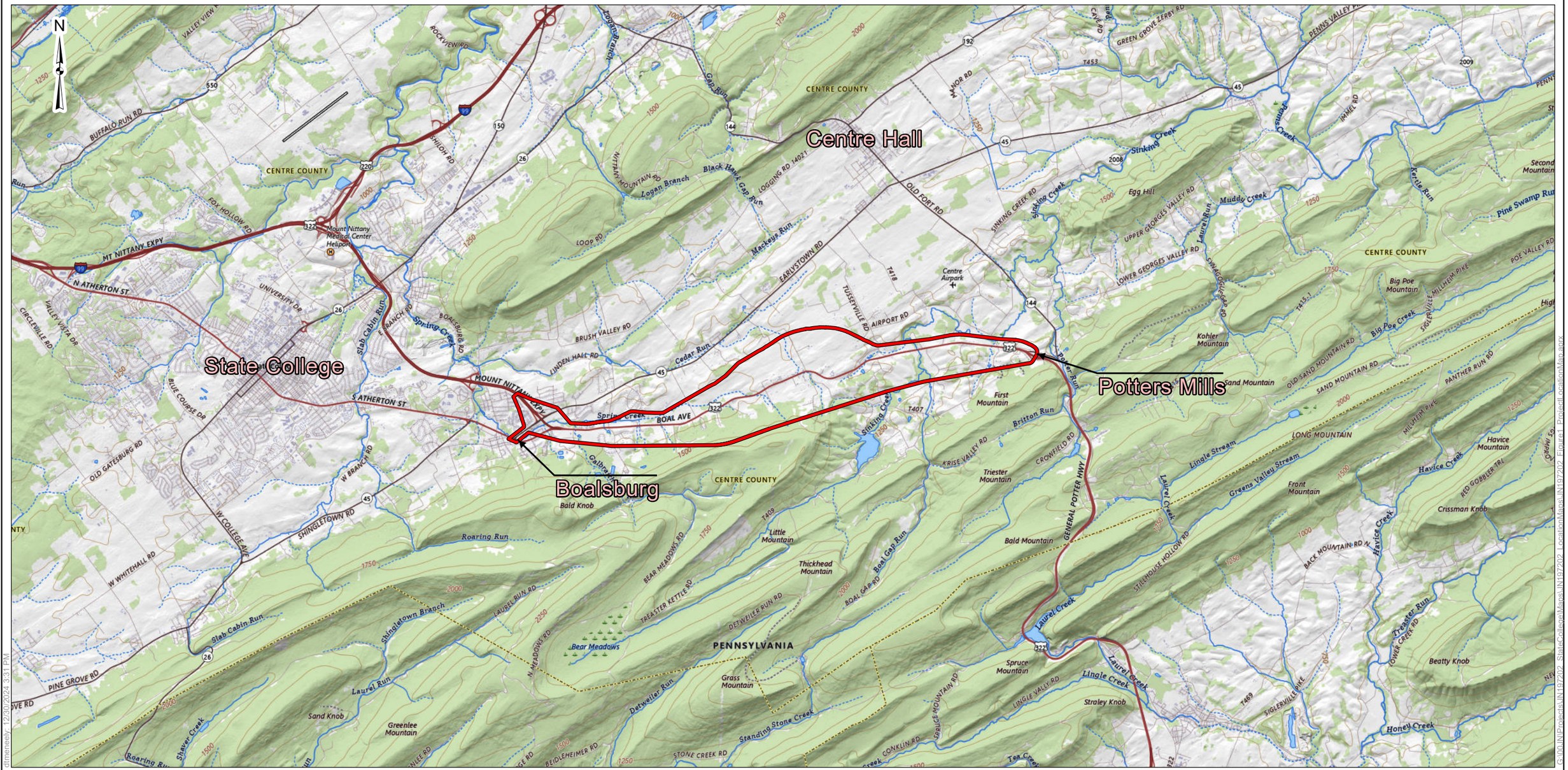
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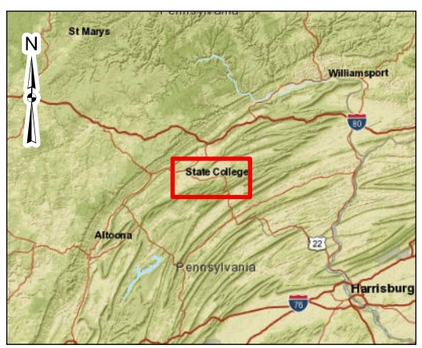
Ben P. Hepler, Staff Scientist, Skelly and Loy, Inc., A Terracon Company

Doug T. Meneely, Senior GIS Analyst, Skelly and Loy, Inc., A Terracon Company

Paul DeAngelo, Senior Principal, Skelly and Loy, Inc., A Terracon Company

IV. FIGURES





Legend

Project Area

DATA SOURCE(S):
USGS Quadrangle - Centre Hall and State College, Pennsylvania 2023

Feet
0 2,500 5,000 10,000 15,000

Project No.:	JN197202
Date:	December 2024
Drawn By:	DTM
Reviewed By:	BSR

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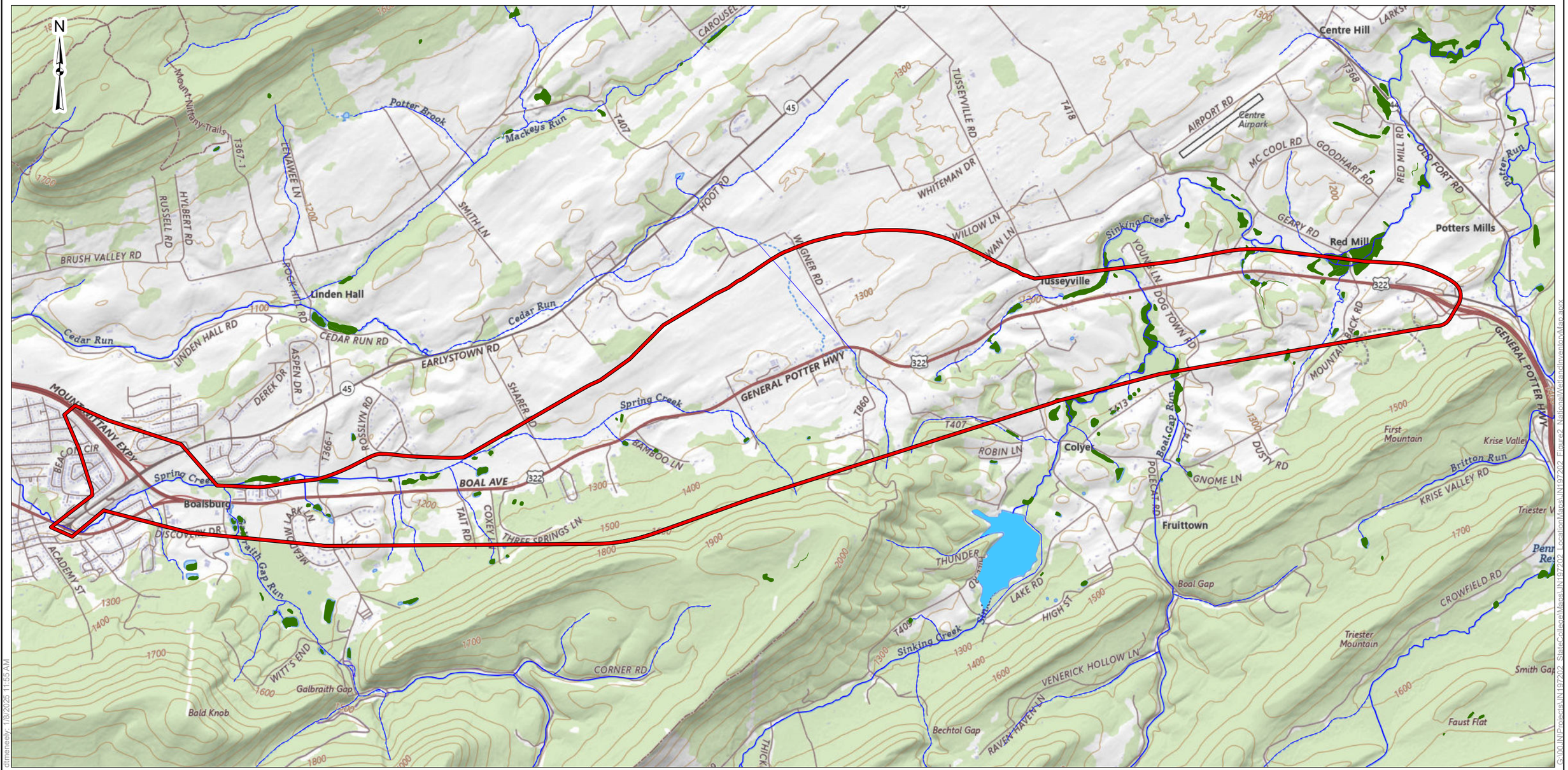
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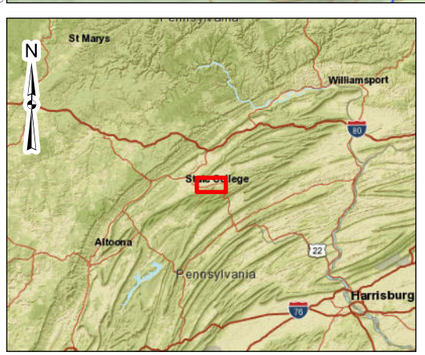
State College Area Connector Project
Centre County, Pennsylvania

Figure

1

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Legend

- Project Area
- Wetland
- Riverine
- Lake, Reservoir

DATA SOURCE(S):
USGS Quadrangle - Centre Hall and State College, Pennsylvania 2023
USFWS 2023

Feet
0 1,500 3,000 6,000

Project No.:	JN197202
Date:	January 2025
Drawn By:	DTM
Reviewed By:	LTZ

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National Wetlands Inventory Map

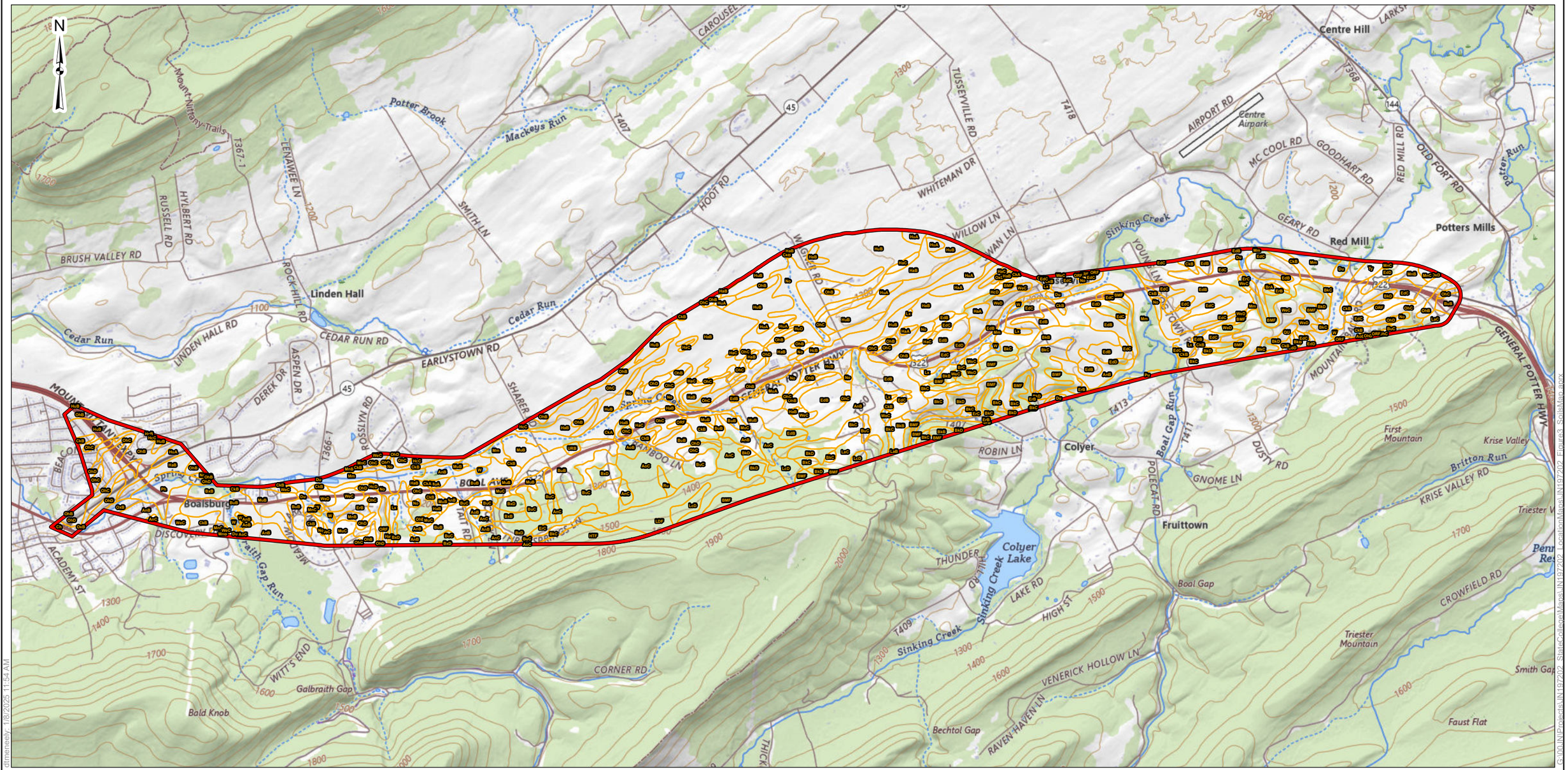
State College Area Connector Project
Centre County, Pennsylvania

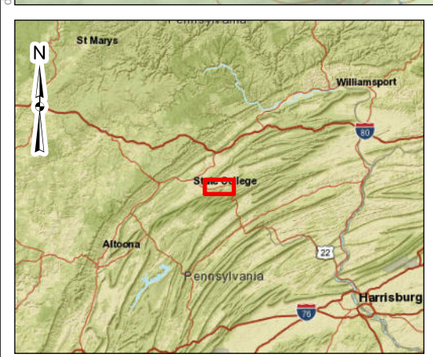
Figure

2

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Legend

- Project Area
- Soils

DATA SOURCE(S):
USGS Quadrangle - Centre Hall and State College, Pennsylvania 2023
NRCS 2023

Feet
0 1,500 3,000 6,000

Project No.:	JN197202
Date:	January 2025
Drawn By:	DTM
Reviewed By:	LTZ

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Soils Map

State College Area Connector Project
Centre County, Pennsylvania

Figure

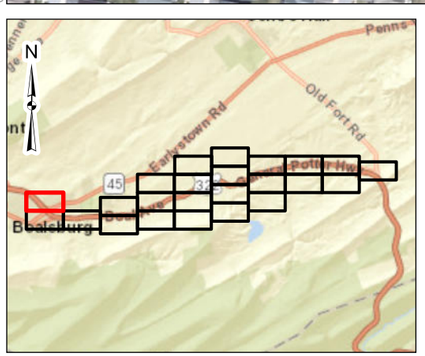
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V. APPENDICES

APPENDIX A –
WETLAND AND WATERCOURSE LOCATION MAP





Legend

- Project Area
- Upland Soil Pit
- Wetland Soil Pit
- Wetland OE
- Ephemeral (EPH)
- Intermittent (INT)
- Perennial (PER)
- Stormwater Conveyance (SWC)
- Assumed (A)
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Open-water (POW)
- Palustrine Scrub-shrub (PSS)
- Stormwater Wetland (SWWL)

DATA SOURCE(S):
PennDOT Drone Aerial Imagery, 2024
Skelly and Loy Inc. Delineation Teams, 2025

Feet
0 150 300 600

Project No.:	JN197202
Date:	March 2025
Drawn By:	DTM
Reviewed By:	LTZ

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Wetland and Watercourse Location Map

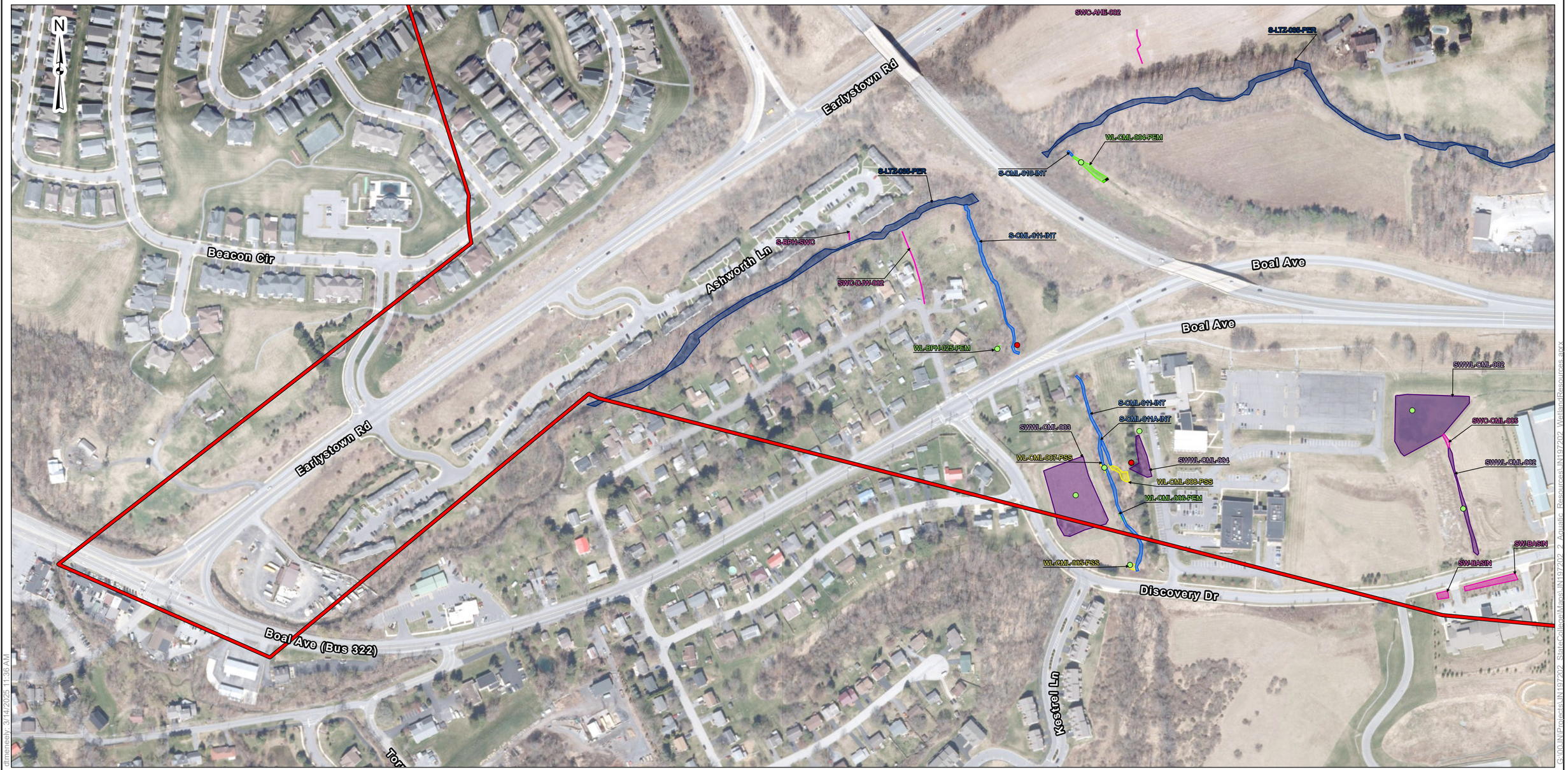
State College Area Connector Project
Centre County, Pennsylvania

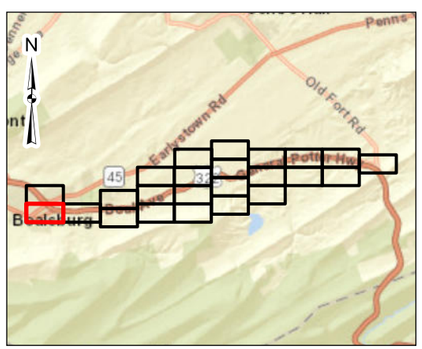
Appendix A

Sheet 1 of 24

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Legend

- Project Area
- Upland Soil Pit
- Wetland Soil Pit
- Wetland OE
- Ephemeral (EPH)
- Intermittent (INT)
- Perennial (PER)
- Stormwater Conveyance (SWC)
- Assumed (A)
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Open-water (POW)
- Palustrine Scrub-shrub (PSS)
- Stormwater Wetland (SWWL)

DATA SOURCE(S):
PennDOT Drone Aerial Imagery, 2024
Skelly and Loy Inc. Delineation Teams, 2025

Feet
0 150 300 600

Project No.:	JN197202
Date:	March 2025
Drawn By:	DTM
Reviewed By:	LTZ

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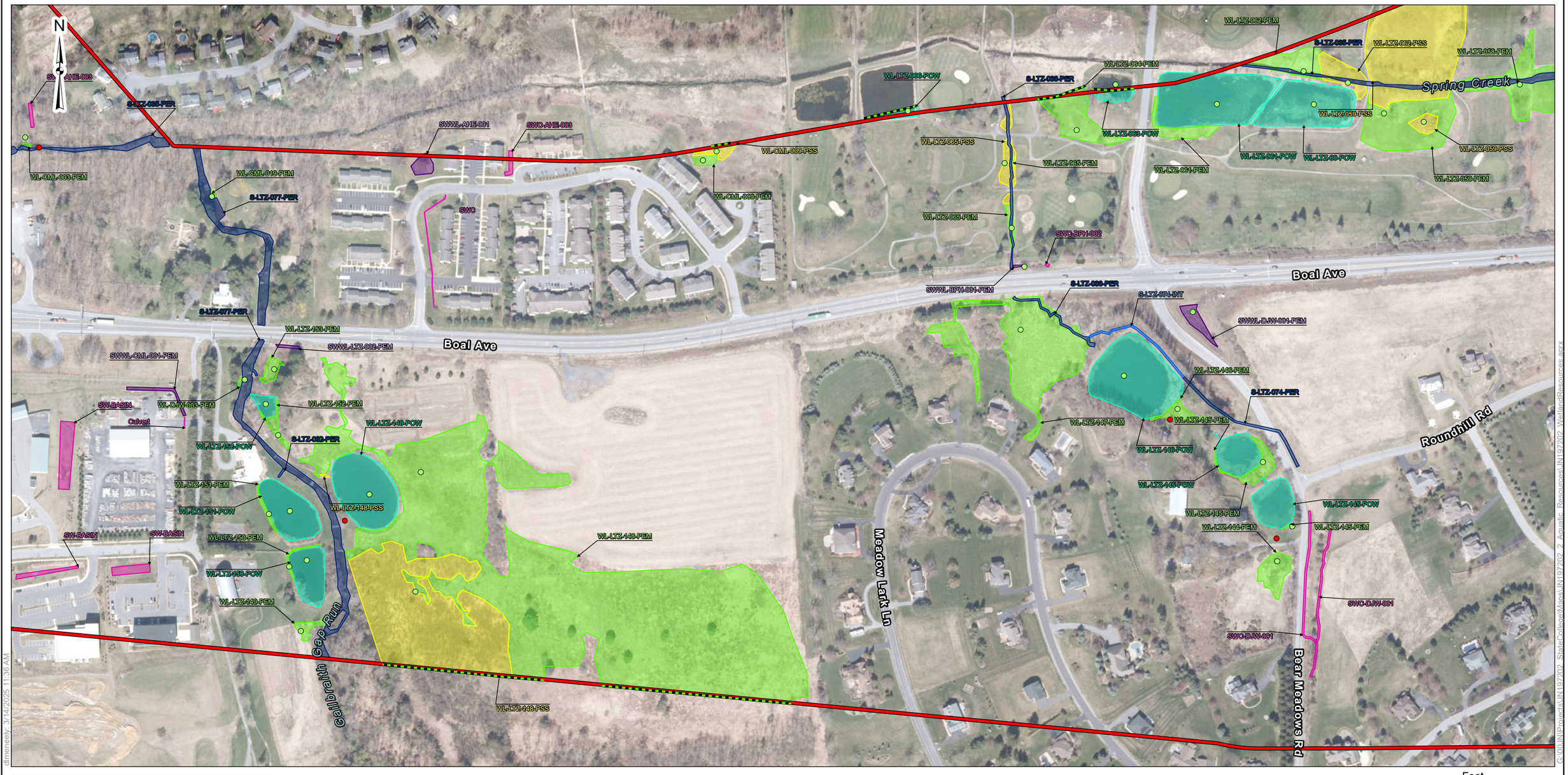
Wetland and Watercourse Location Map

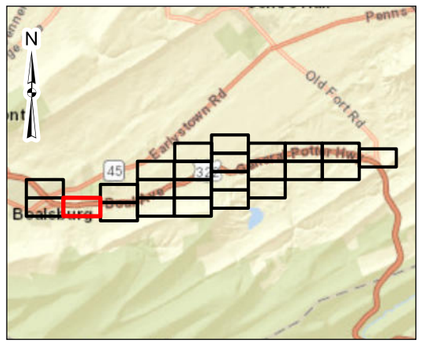
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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Legend

- Project Area
- Upland Soil Pit
- Wetland Soil Pit
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DATA SOURCE(S):
PennDOT Drone Aerial Imagery, 2024
Skelly and Loy Inc. Delineation Teams, 2025

Feet
0 150 300 600

Project No.:	JN197202
Date:	March 2025
Drawn By:	DTM
Reviewed By:	LTZ

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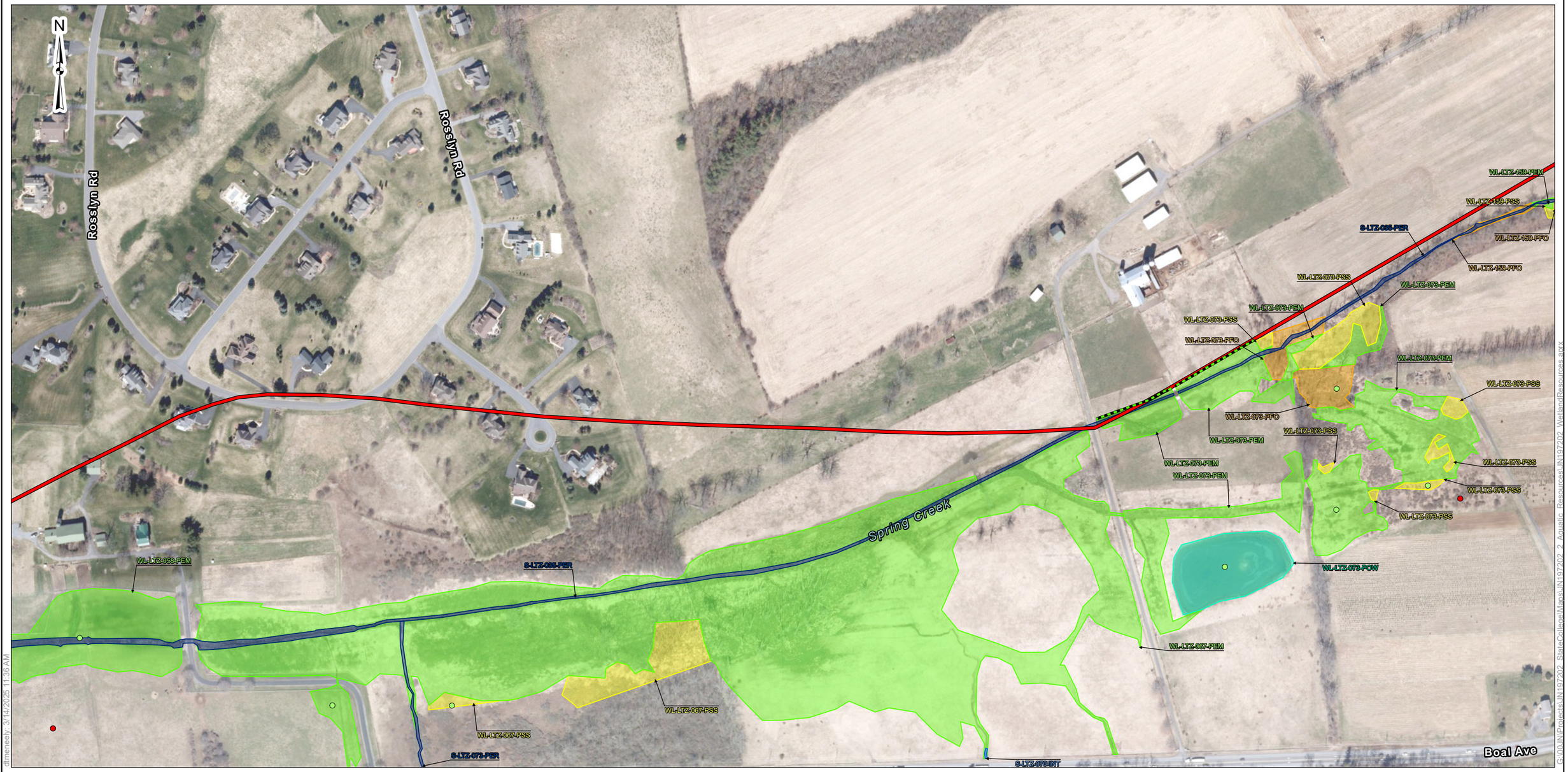
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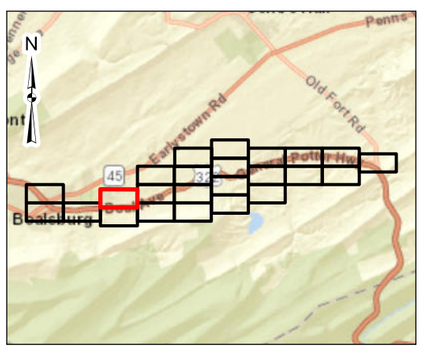
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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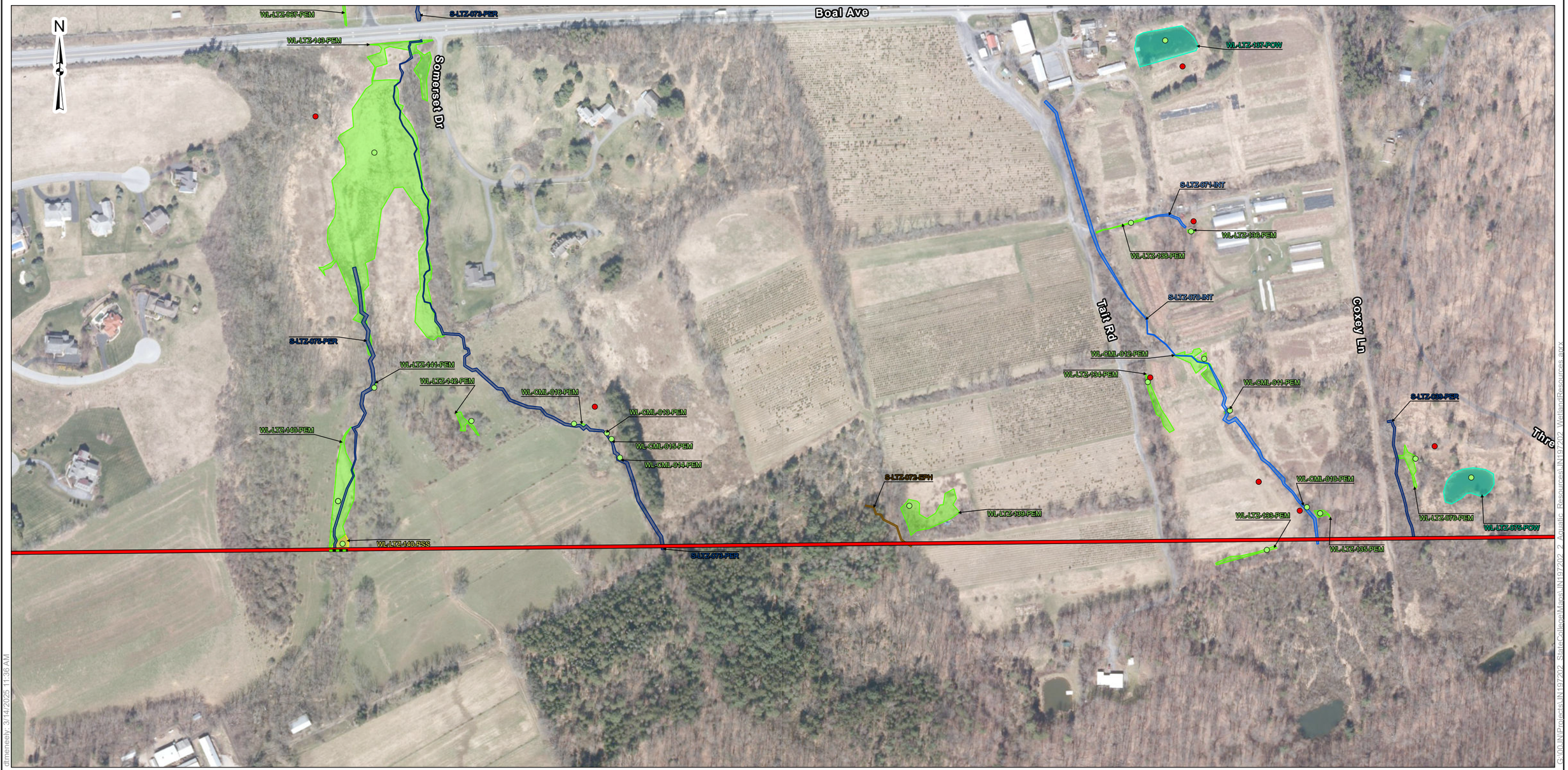
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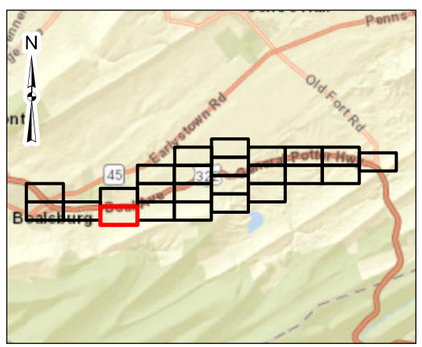
State College Area Connector Project
Centre County, Pennsylvania

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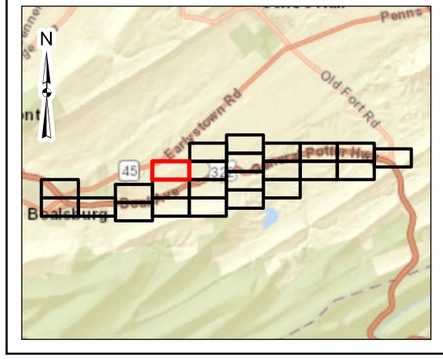
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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Wetland and Watercourse Location Map

State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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Spring Creek

Sharer Rd

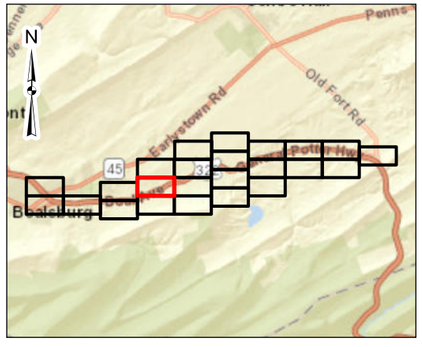
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Lemont Meadow Ln

General Potter Hwy

Bamboo Ln

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WL-LTZ-131-PEM
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WL-LTZ-137-PSS
WL-LTZ-131-PSS
WL-CML-020-PEM
WL-LTZ-159-PEM
WL-LTZ-159-PSS
WL-LTZ-158-PSS
WL-LTZ-157-PSS
WL-LTZ-157-PEM
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SWL-LTZ-A
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SWC-BPH-102
WL-LTZ-124-PEM
WL-CML-017-POW
WL-BPH-014-PEM
WL-LTZ-123-PEM
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WL-LTZ-121-POW
WL-DJW-005-PEM
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S-LTZ-083-INT
S-LTZ-084-PER
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Wetland and Watercourse Location Map

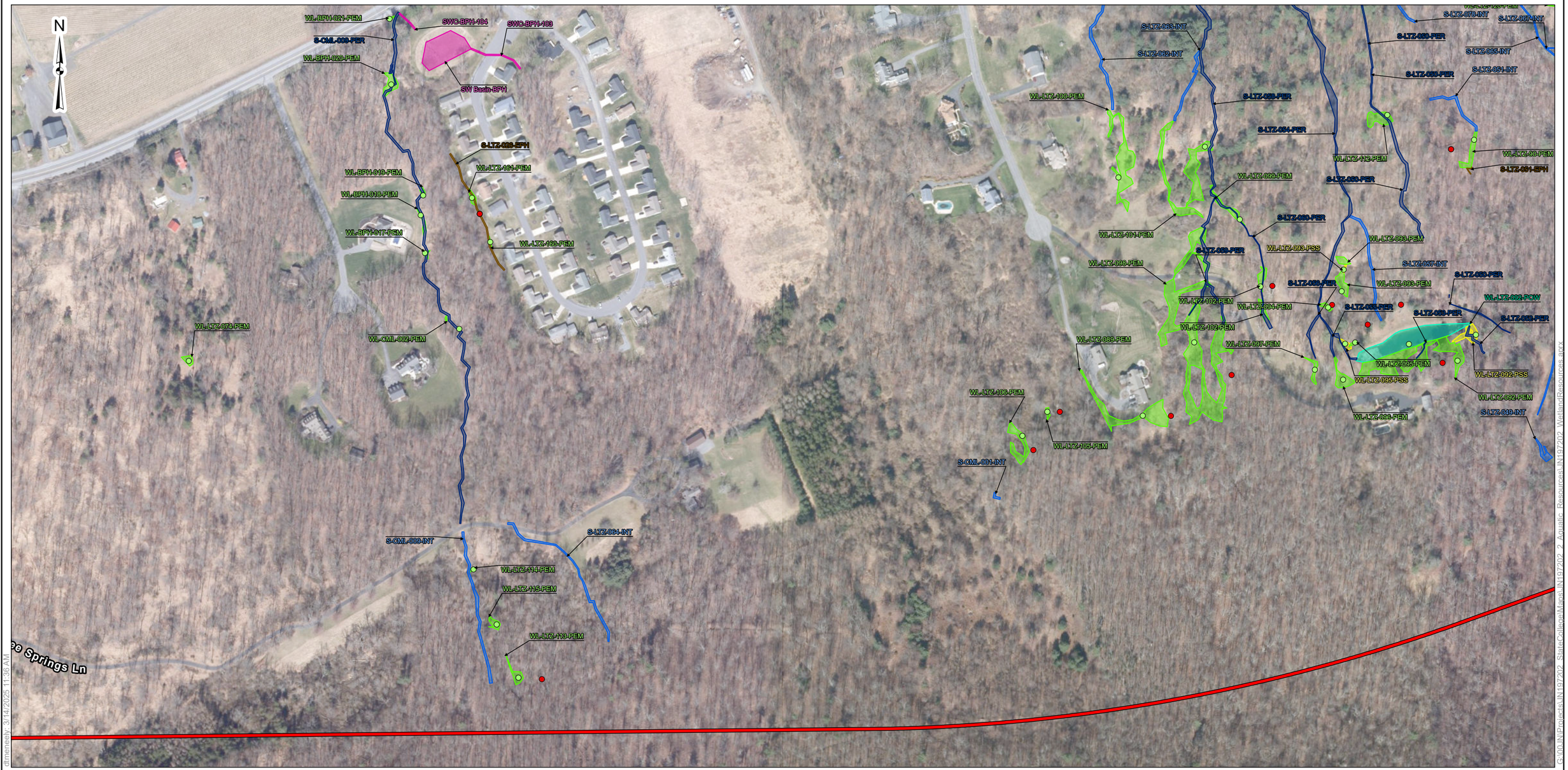
State College Area Connector Project
Centre County, Pennsylvania

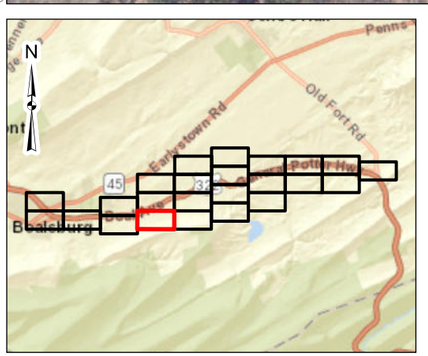
Appendix A

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Wetland and Watercourse Location Map

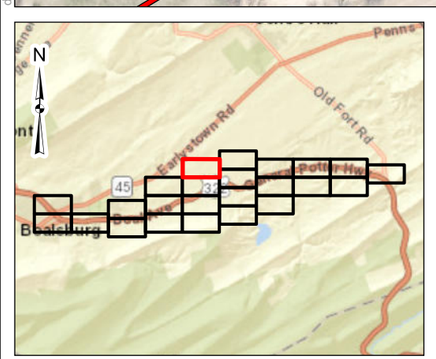
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

Sheet 8 of 24

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Wetland and Watercourse Location Map

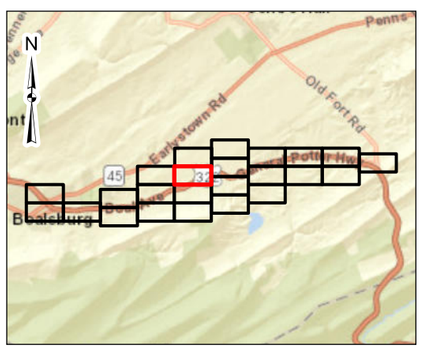
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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Legend

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Skelly and Loy Inc. Delineation Teams, 2025

Feet
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Project No.:	JN197202
Date:	March 2025
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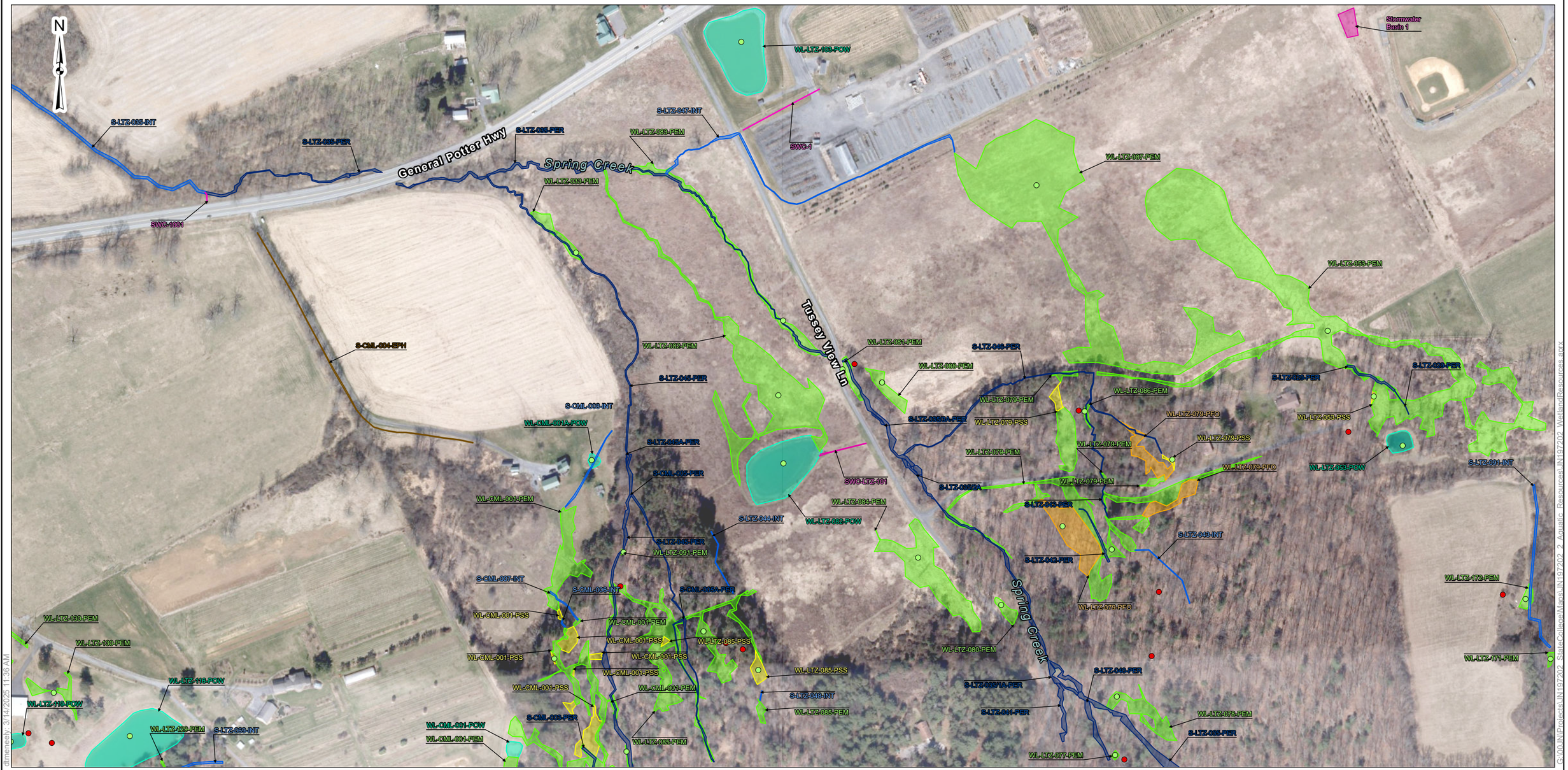
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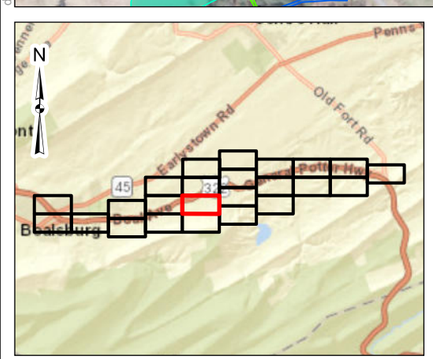
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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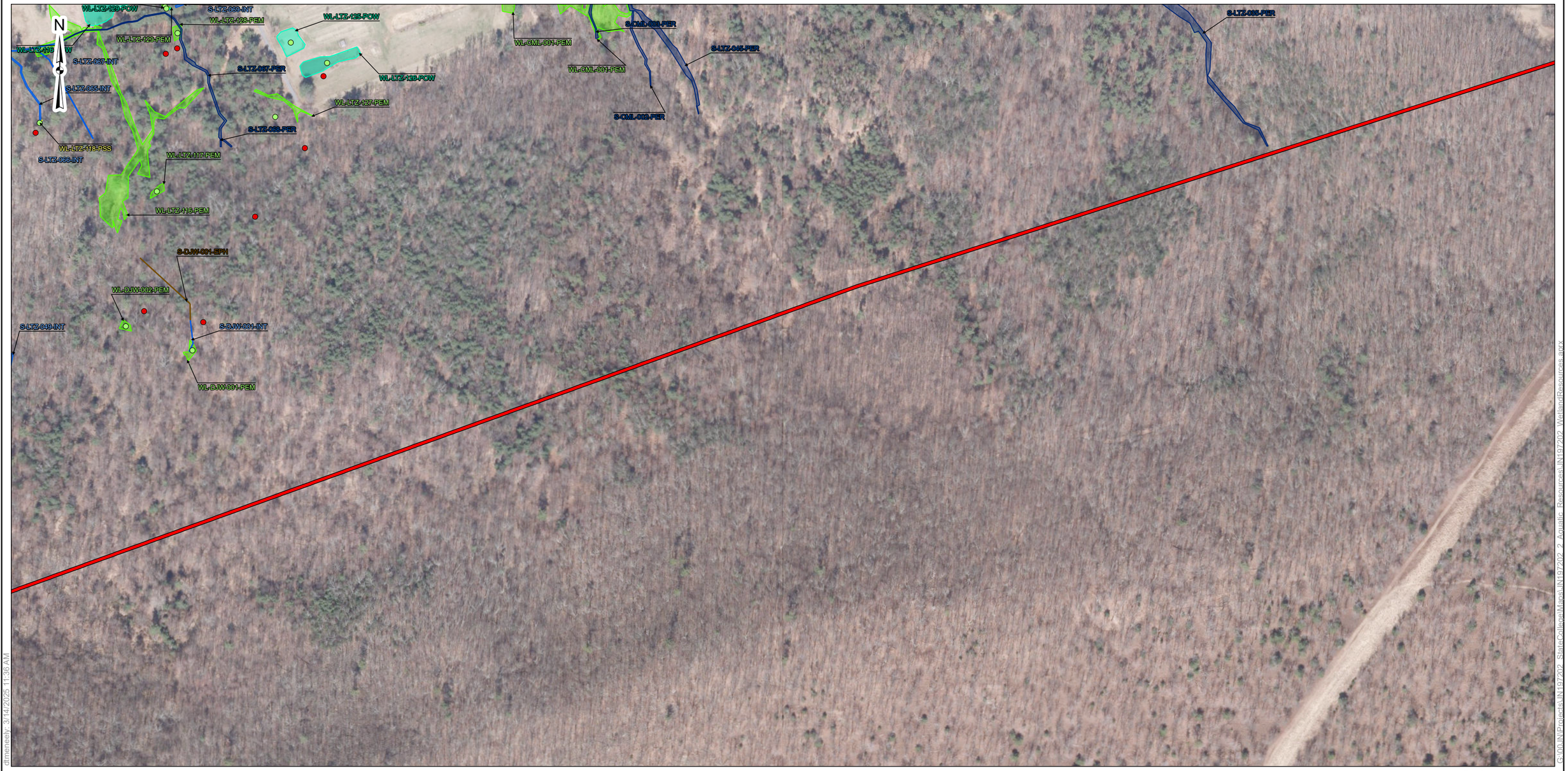
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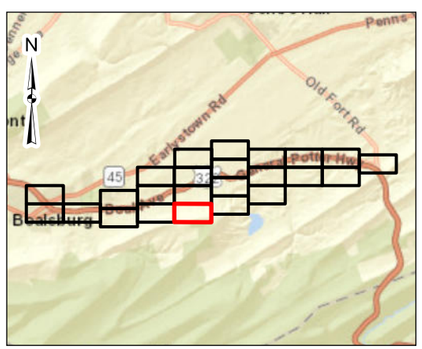
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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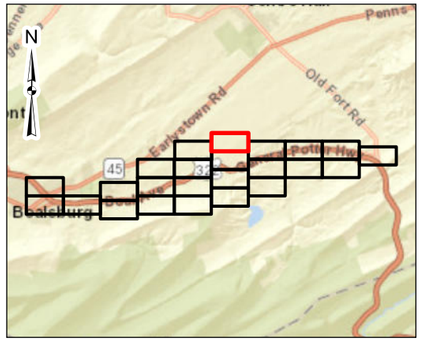
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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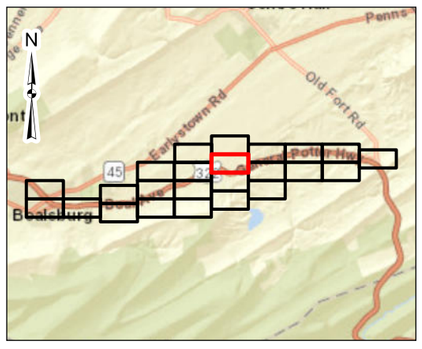
State College Area Connector Project
Centre County, Pennsylvania

Appendix A

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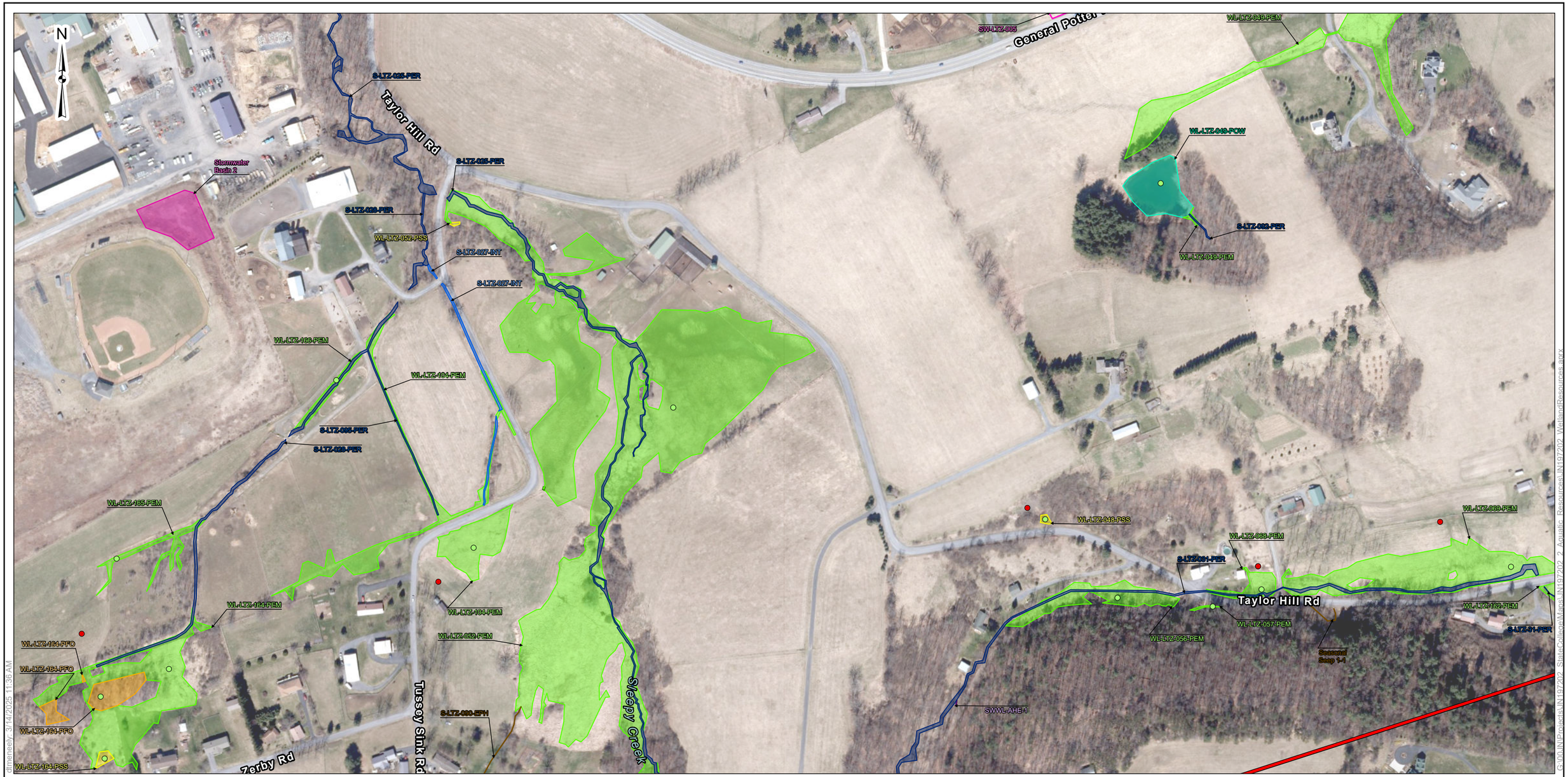
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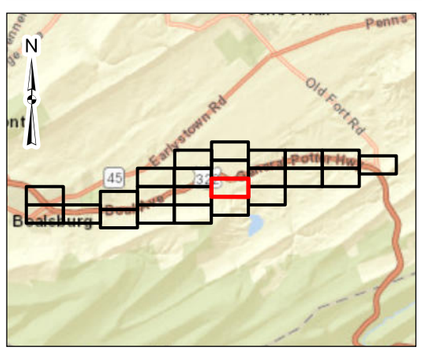
State College Area Connector Project
Centre County, Pennsylvania

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Sheet 14 of 24

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Wetland and Watercourse Location Map

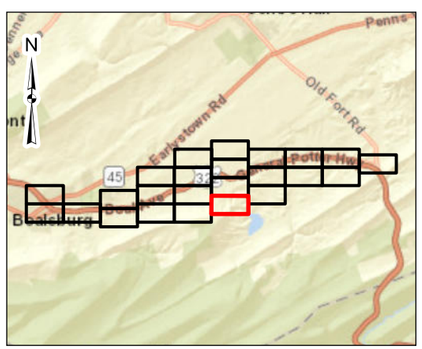
State College Area Connector Project
Centre County, Pennsylvania

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Legend

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- Palustrine Scrub-shrub (PSS)
- Stormwater Wetland (SWWL)

DATA SOURCE(S):
PennDOT Drone Aerial Imagery, 2024
Skelly and Loy Inc. Delineation Teams, 2025

Feet
0 150 300 600

Project No.:	JN197202
Date:	March 2025
Drawn By:	DTM
Reviewed By:	LTZ

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Wetland and Watercourse Location Map

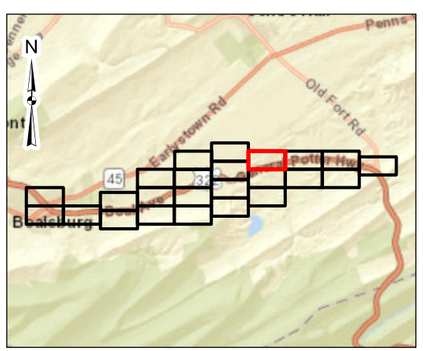
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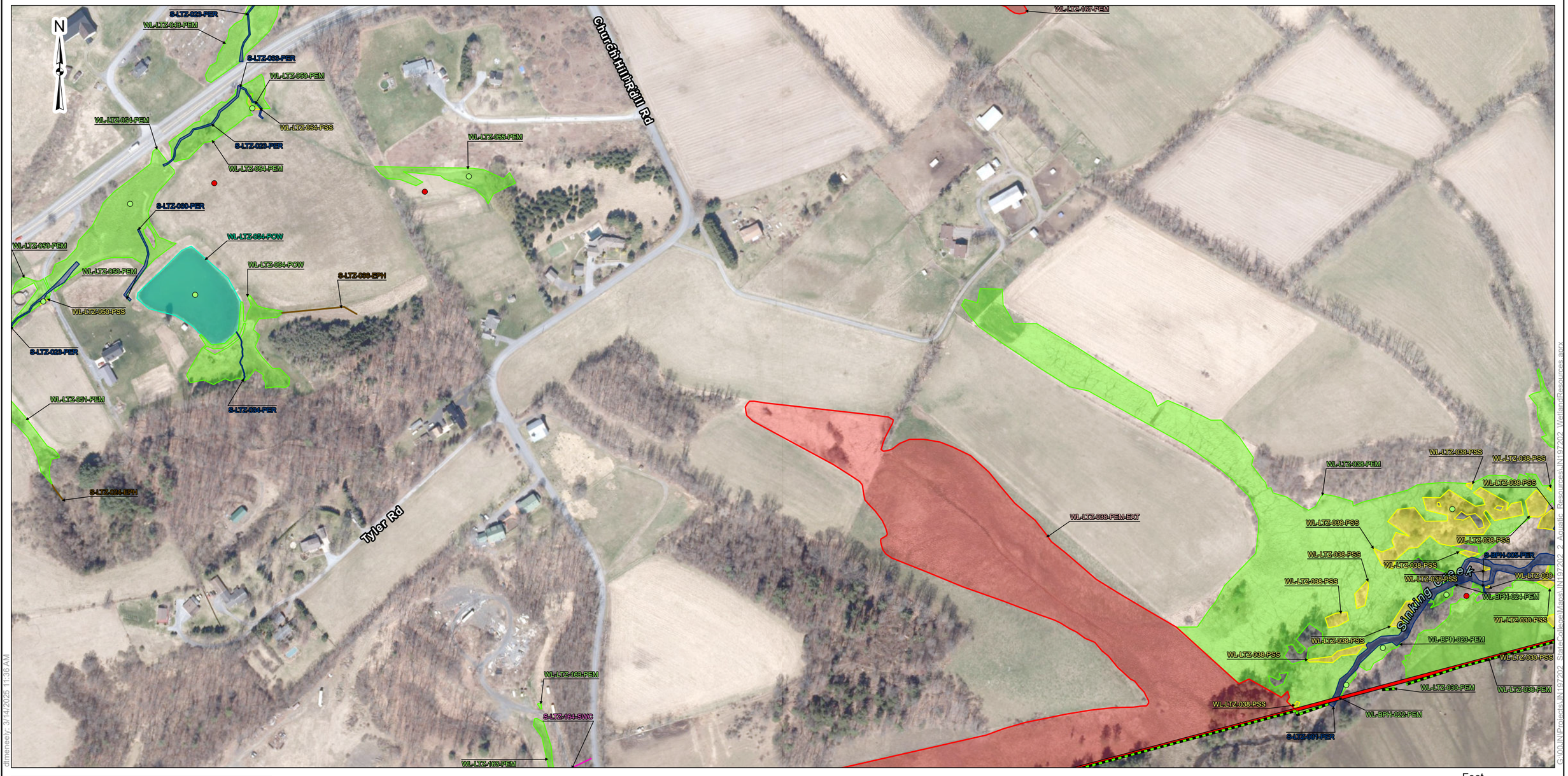
State College Area Connector Project
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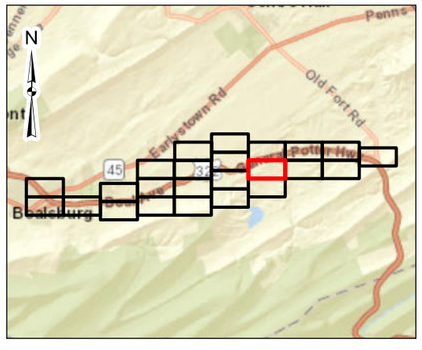
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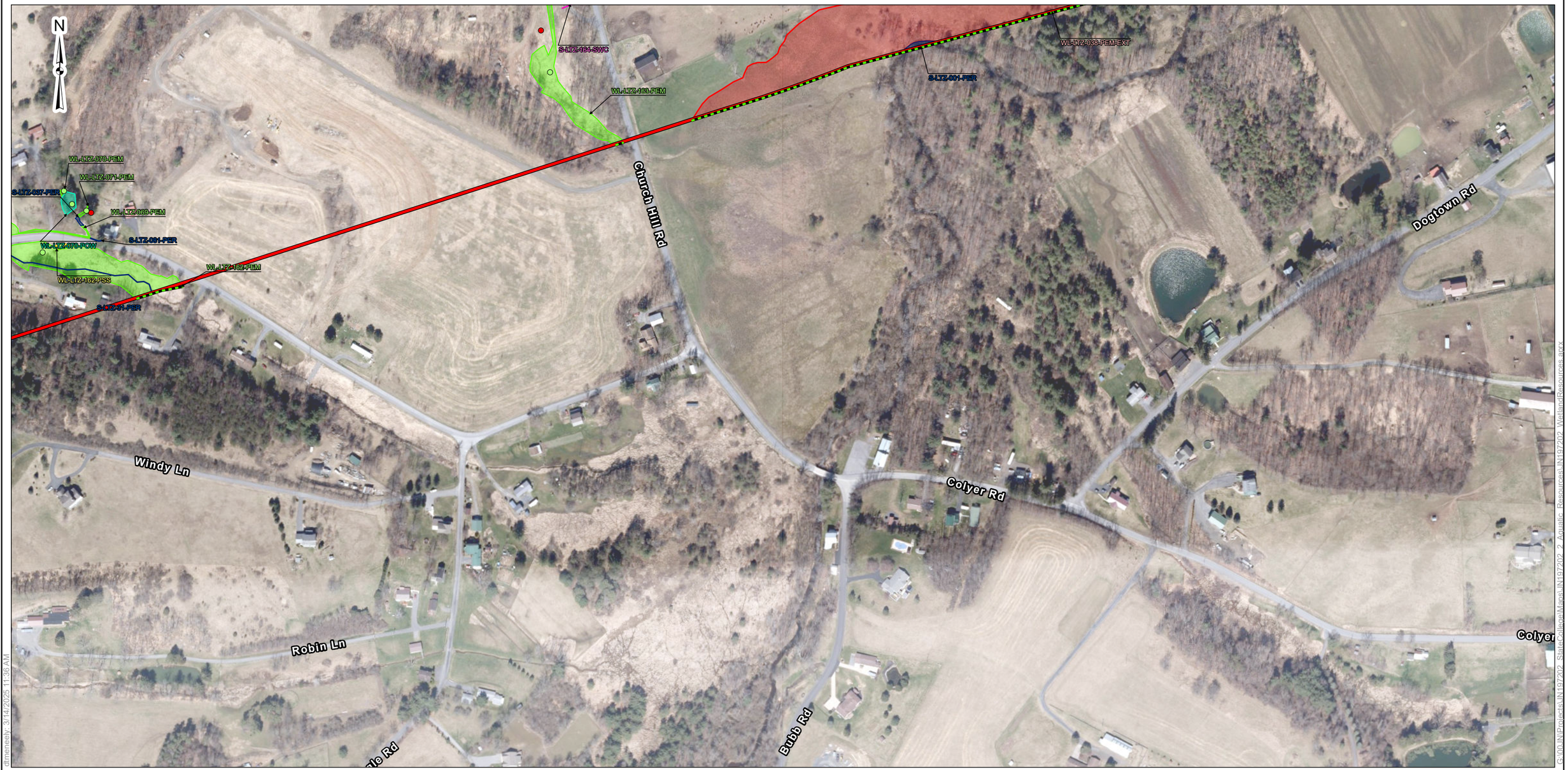
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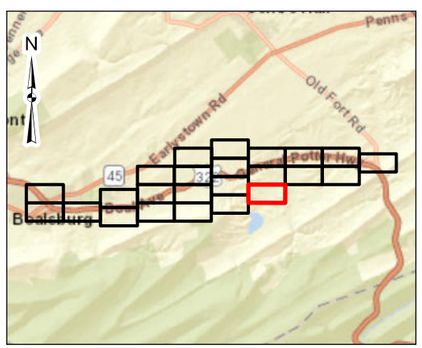
Wetland and Watercourse Location Map

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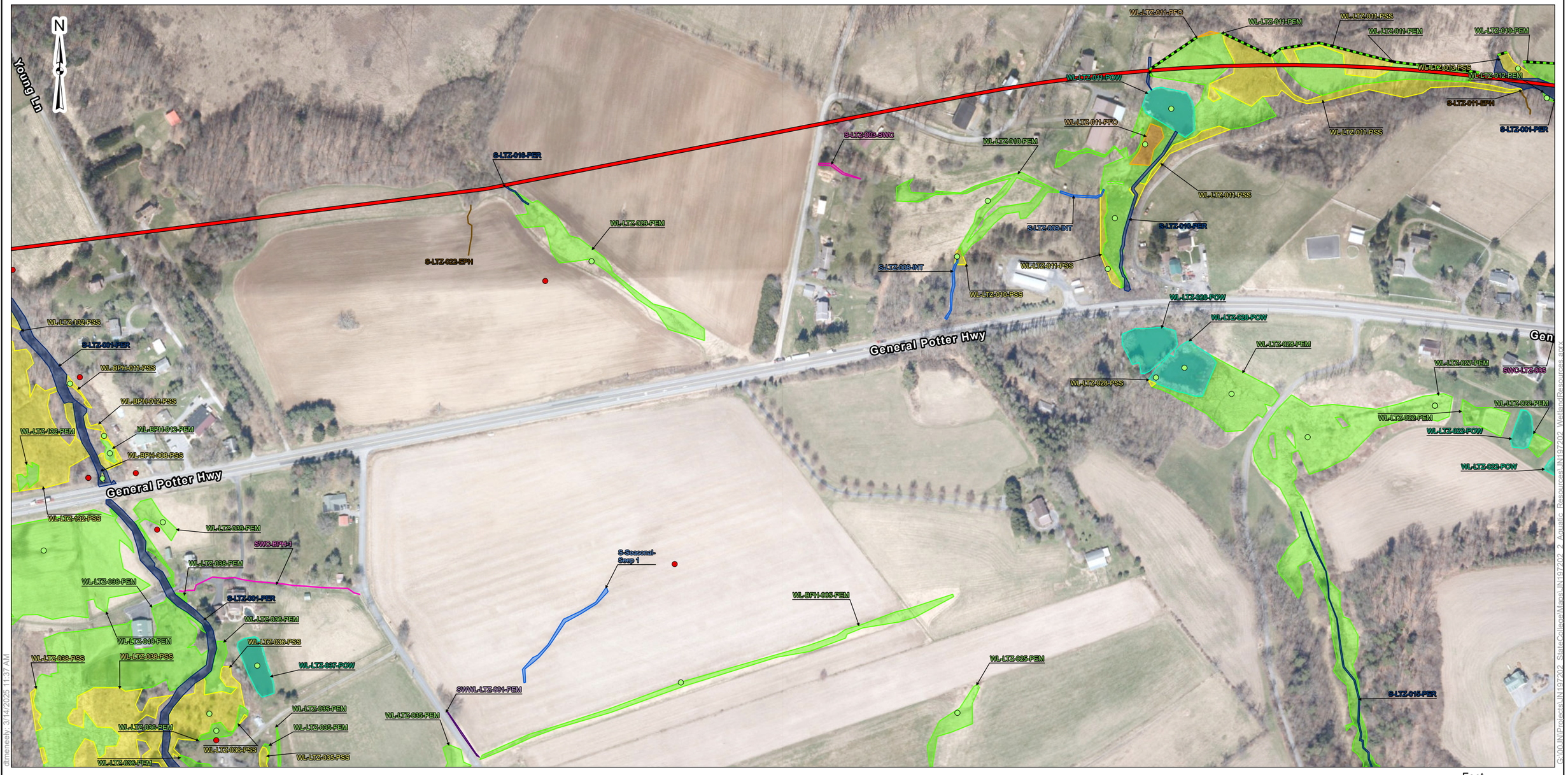
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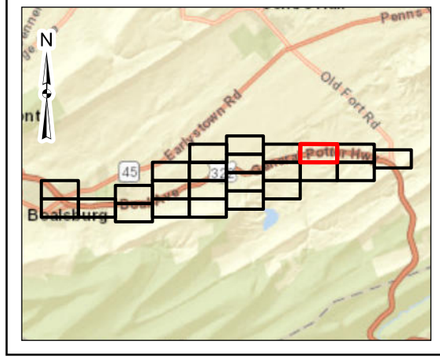
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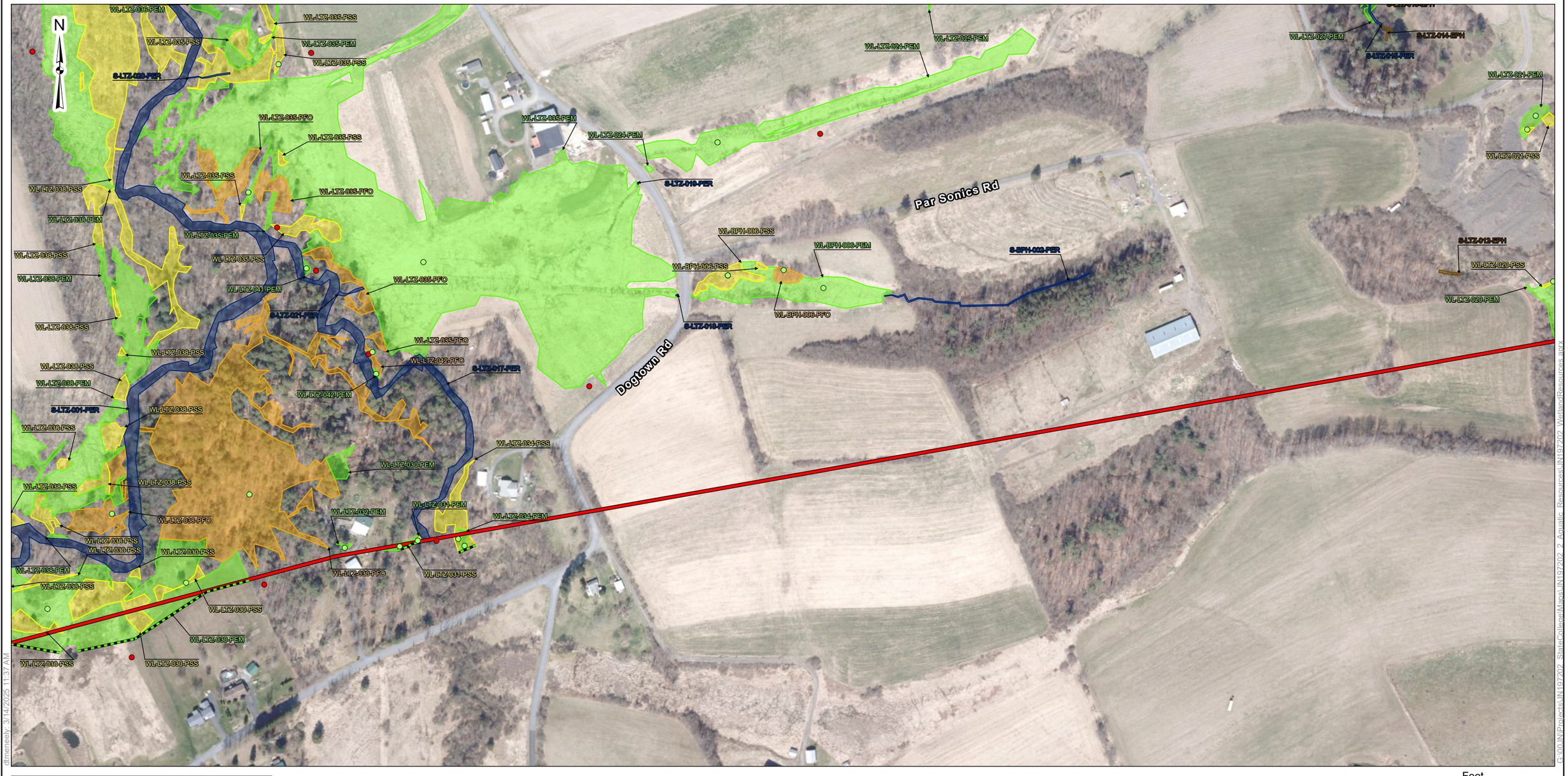
Wetland and Watercourse Location Map

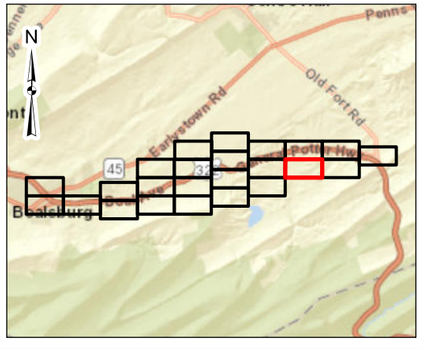
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Wetland and Watercourse Location Map

State College Area Connector Project
Centre County, Pennsylvania

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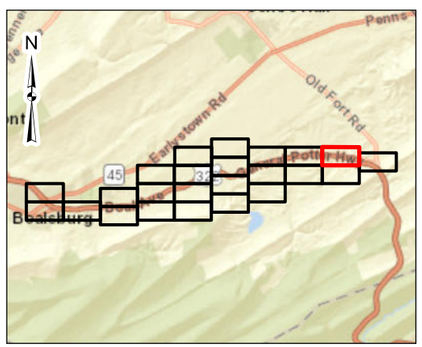
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WL-LTZ-014-PFO
S-ANE-001-PER
S-LTZ-001-PER
WL-LTZ-110-PEM
WL-LTZ-110-PSS
S-LTZ-001-PER
WL-LTZ-002-PSS
WL-LTZ-001-PEM
WL-LTZ-012-PEM
WL-LTZ-015-PFO
WL-LTZ-017-PSS
WL-LTZ-013-PFO
WL-LTZ-019-PEM
WL-LTZ-016-PSS
Sinking Creek
WL-LTZ-003-PSS
WL-LTZ-001-PSS
Red Mill Rd
WL-LTZ-016-PEM
WL-LTZ-016-PSS
SWC-LTZ-005
eral Potter Hwy
WL-LTZ-016-PEM
WL-LTZ-023-PEM
WL-LTZ-023-PEM
WL-LTZ-023-PEM
WL-LTZ-018-PEM
S-LTZ-101-SWC
WL-LTZ-023-PSS
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S-BPH-001-PER
WL-LTZ-018-PEM
WL-LTZ-169-PEM
WL-LTZ-169-PEM
WL-LTZ-022-POW
WL-LTZ-023-POW
General Potter Hwy
Skyview Dr
WL-LTZ-109-PSS
WL-LTZ-109-PEM
WL-LTZ-109-PEM
S-LTZ-100-INT
WL-LTZ-169-PEM
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WL-LTZ-108-PEM
SWC-LTZ-004
WL-LTZ-108-PSS
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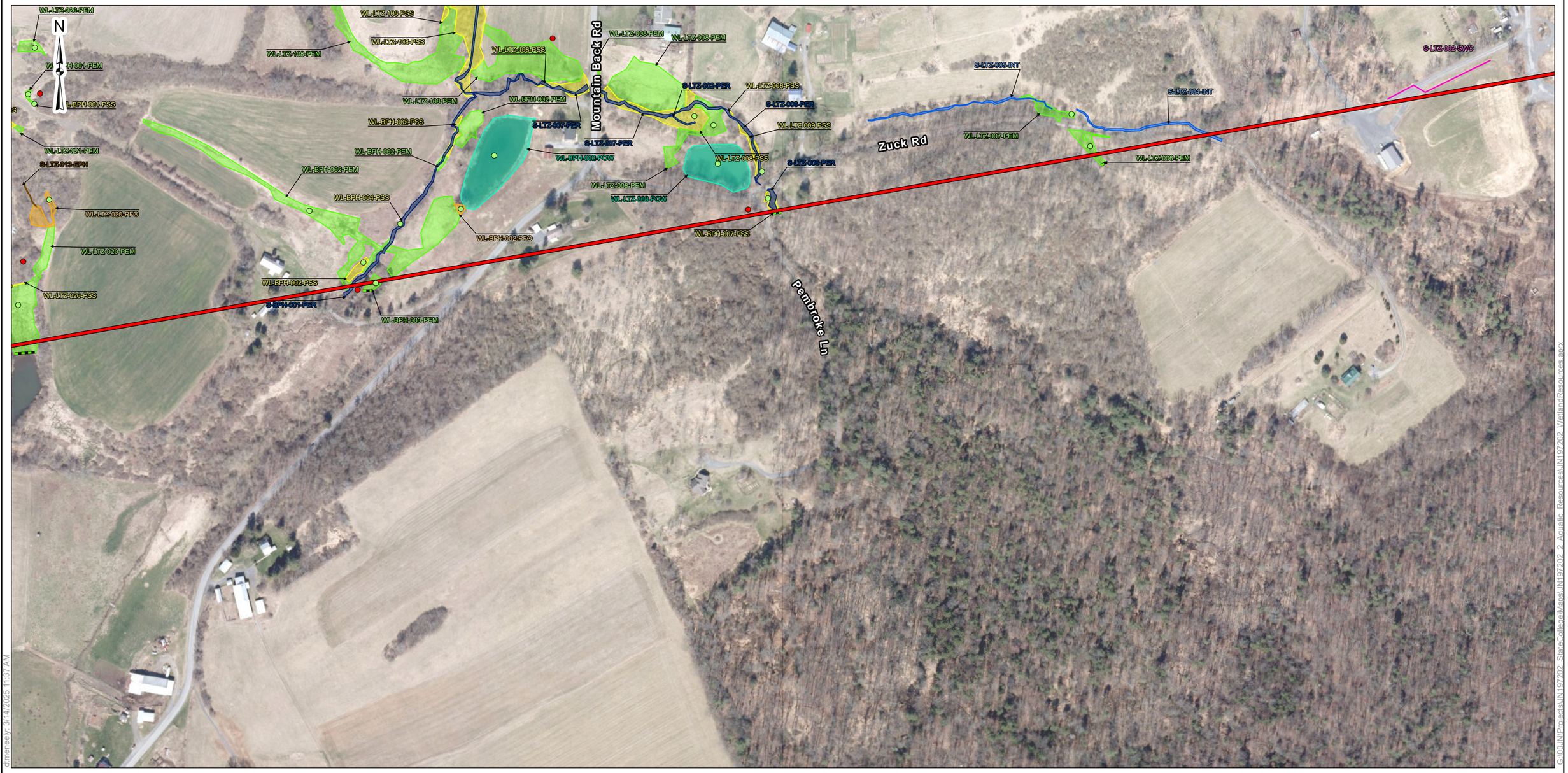
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Wetland and Watercourse Location Map

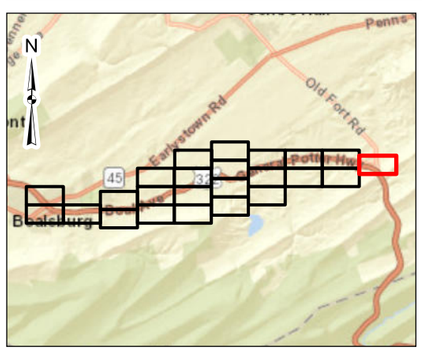
State College Area Connector Project
Centre County, Pennsylvania

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WL-LTZ-008-PEM
WL-LTZ-008-PSS
WL-LTZ-008-PEM
WL-LTZ-008-PEM
WL-LTZ-008-PEM
WL-LTZ-008-PSS





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Wetland and Watercourse Location Map

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APPENDIX B –
WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-001-PEM
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793986° Long: -77.650756° Datum: WGS-84
Soil Map Unit Name: Quarry (Qu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland was underlain by impervious compacted soils that retain surface water runoff. The wetland likely formed as a result of poor grading in a mine spoil area. Delineation followed soils with redoximorphic features, concave microtopography, and hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-3
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-001-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	30	✔	FACW
2. Juncus tenuis	5		FAC
3. Carex stricta	45	✔	OBL
4. Solidago sp.	5		ND
5. Poa sp.	15		ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL

Sampling Point: WL-BPH-001-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	95	10YR5/6	5	C	M	Silt loam	
4-6	10YR4/1	100					Silt loam	
6+							Compacted Gravel	Compacted gravel at 6 inches.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

- Soils appeared disturbed due to historical construction/mining activities.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-001-PSS
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793904° Long: -77.650687° Datum: WGS-84
Soil Map Unit Name: Quarry (Qu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland was underlain by impervious compacted soils that retain surface water runoff. The wetland likely formed as a result of poor grading in a mine spoil area. Delineation followed soils with redoximorphic features, surface water, and a dense stand of silky dogwood, which contrasted with the surrounding uplands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-001-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-001-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR3/1	100					Silt Loam	
4+							Compacted Gravel	Compacted gravel below 4 inches.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

- Soils appeared disturbed due to historical construction/mining activities.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-001-UPL
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794000° Long: -77.650626° Datum: WGS-84
Soil Map Unit Name: Quarry (Qu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-001-UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Quercus alba	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	10		ND
2. Solidago altissima	20	✔	FACU
3. Asclepias syriaca	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-BPH-001-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-002-PEM
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792991° Long: -77.647604° Datum: WGS-84
Soil Map Unit Name: Weikert channery silt loam (WeD), Melvin silt loam (Mm), Edom silt loam (EdD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is in the floodplain of a channel and delineation followed hydric soils and vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-4
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding, surface water runoff, a perennial high water table, and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-002-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Setaria pumila	5		FAC
2. Phalaris arundinacea	45	✔	FACW
3. Epilobum sp.	15		100%
4. Persicaria sagittata	5		OBL
5. Persicaria pensylvanica	5		FACW
6. Typha latifolia	5		OBL
7. Acorus americanus	15		OBL
8. Impatiens capensis	5		FACW
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Epilobium sp. 100% FAC-OBL

SOIL

Sampling Point: WL-BPH-002-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/1	85	10YR5/6	15	C	M	Silty Clay Loam	Water at 6 inches
6-16	10YR4/1	80	5YR5/8	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-002-PSS
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792541° Long: -77.646998° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows stands of silky dogwood and hydric soils where it eventually meets the PEM section.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-002-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	80	✔	FACW
2. Acer negundo	20	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-002-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	97.5	10YR3/4	2.5	C	M	Silty Clay Loam	
10-16	10YR4/2	85	10YR3/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-002-PFO
Investigator(s): BPH, CML, SNW, LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793072° Long: -77.645836° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✔ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-002-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus palustris	50	✔	FACW
2. Acer rubrum	50	✔	FAC
3.			
4.			
5.			
6.			
7.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-002-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	97.5	10YR3/4	2.5	C	M	Silty Clay Loam	
10-16	10YR4/2	85	10YR3/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-002-POW
Investigator(s): BPH, CML, SNW, LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793458° Long: -77.645527° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made pond. Delineation follows obvious surface water and a constructed berm.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 12+
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, a high water table, and seasonal seeps provided hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-002-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Lemna minor	25	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-002-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								N/A*

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

*Soils not taken - no transition zone between open water and surrounding uplands. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-BPH-002-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-003-PEM
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792365° Long: -77.646862° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland was located within a bowl-shaped depression. The delineation followed cattails, surface water, and mucky soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-003-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	60	✔	OBL
2. Carex lurida	30	✔	OBL
3. Impatiens capensis	5		FACW
4. Persicaria sagittata	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-003-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/1	97.5	2.5Y5/4	2.5	C	M	Silty Clay Loam	Water at 2 inches
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-004-PSS
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792869° Long: -77.646583° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench. Delineation follows stand of silky dogwood and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-004-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	80	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-004-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	85	5YR4/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH- 2,3,4 UPL
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791946° Long: -77.647118° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-2,3,4 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Dipsacus fullonum	30	✔	FACU
2. Solidago altissima	30	✔	FACU
3. Asclepias syriaca	30	✔	FACU
4. Poa sp.	10		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-BPH-002,003,004 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-005-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795471° Long: -77.660777° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located in a highly disturbed/grazed bull pasture. Vegetation located in the wetland was cropped to approximately 4". The delineation followed saturated/hydric soils which corresponded with the low topographical area of the swale.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-005-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	90	✔	FACW
2. Juncus tenuis	5		FAC
3. Cyperus esculentus	5		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-005-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/3	5	C	M	Silty Clay Loam	Water at 2 inches
			5YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-005-UPL
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 47 Lat: 40.796481° Long: -77.660842° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-005-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Trifolium repens	30	✔	FACU
2. Poa sp.	50	✔	ND
3. Zea mays	20	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-005-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-006-PEM
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792321° Long: -77.659170° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is located within a valley and receives hydrology from an upgradient perennial stream as well as surface water run-off and seasonal seeps. The delineation of the wetland system followed hydrophytic vegetation and saturated soils which contrasted with the surrounding upland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-006-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	75	✔	FACW
2. Typha latifolia	5		OBL
3. Impatiens capensis	5		FACW
4. Onoclea sensibilis	5		FACW
5. Carex lurida	5		OBL
6. Juncus effusus	5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-006-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR 5/6	10	C	M	Silty Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-006-PSS
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): 147 Lat: 40.792431° Long: -77.660243° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

PSS receives the same hydrology of the PEM portion. Delineation follows dense stands of silky dogwood.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-006-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	70	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Carex sp.	5		ND
3. Juncus effusus	5		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-BPH-006-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	5YR5/6	10	C	M	Silty Clay Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-006-PFO
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792475° Long: -77.659616° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The forested wetland is located in a stand of trees within the wetland boundary. The wetland area is mesic with upland trees dominant. However, the understory has hydrophytic emergent vegetation, hydric soils, and hydrology (saturation and surface water). Indicators show that this may be a more recently developed portion of the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 10
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-006-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	35	✔	FACU
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	35	✔	FACW
2. Juncus effusus	5		FACW
3. Sphagnum sp.	5		ND
4. Carex sp.	5		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	90 (A)		270 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-006-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	97.5	10YR5/4	2.5	C	M	Silty Clay Loam	Water at 10 inches
6-16	10YR4/2	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-006-UPL
Investigator(s): BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): 147 Lat: 40.792431° Long: -77.660243° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-006-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	30	✔	FACU
2. Rosa multiflora	30	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	25	✔	ND
2. Solidago sp.	10	✔	ND
3. Asclepias syriaca	5		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-006-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-007-PSS
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793089° Long: -77.642519° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The delineation follows a low-lying area, a dense stand of silky dogwoods, and evidence of flooding (sediment deposits and drainage patterns).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, surface water runoff, and seasonal high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-007-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	60	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	40	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-007-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	85	5YR3/4	10	C	M	Silt Loam	
			7.5YR4/6	5	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-007-PSS-UPL
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792989° Long: -77.642677° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-007-PSS-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Robinia pseudoacacia	5		FACU
2. Quercus rubra	5		FACU
3. Acer saccharum	5		FACU
4. Juglans nigra	25	✔	FACU
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	50	✔	FACU
2. Rubus sp.	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-BPH-007-PSS-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-008-PSS
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodway Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797225° Long: -77.667206° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is an island feature within Sinking Creek that has hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-008-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Eutrochium purpureum	30	✔	75%
2. Elaeagnus umbellata	20	✔	NS
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	5		FACW
2. Typha latifolia	5		OBL
3. Euthamia graminifolia	10		FAC
4. Carex sp.	15	✔	75%
5. Eutrochium purpureum	20	✔	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-008-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR4/2	90	7.5YR3/4	10	C	M	Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-008--UPL
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodway Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797233° Long: -77.667424° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-008-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	25	✔	UPL
2. Tilia americana	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2. Elaeagnus umbellata	20	✔	ND
3. Ligustrum vulgare	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-BPH-008-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-009-PSS
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798867° Long: -77.668965° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-009-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	45	✔	FACW
2. Salix nigra	10	✔	OBL
3. Rosa multiflora	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	5		FACW
2. Impatiens capensis	10	✔	FACW
3. Euthamia graminifolia	5		FAC
4. Carex sp.	5		75%
5. Onoclea sensibilis	5		FACW
6. Lysimachia nummularia	10	✔	FACW
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-BPH-009-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR3/2	95	7.5YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-009-UPL
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798785° Long: -77.669073° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-009-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	15	✔	UPL
2. Tilia americana	15	✔	FACU
3. Tsuga canadensis	15	✔	FACU
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	20	✔	FACU
2. Rosa multiflora	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 0)			
1. Poa sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	5	✔	ND
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-009-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silt Loam	
8+							Rock	Rock present below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-010-PEM
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798953° Long: -77.668617° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-010-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	80	✔	FACW
2. Onoclea sensibilis	20	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-010-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Silt Loam	
3-16	10YR4/2	90	10YR3/6	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-010-PSS
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799007° Long: -77.668544° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-010-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	35	✔	FACW
2. Ligustrum vulgare	10		FACU
3. Rosa multiflora	5		FACU
4. Sambucus nigra	5		FAC
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Carex sp.	10		75%
2. Onoclea sensibilis	10		FACW
3. Lysimachia nummularia	25	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL Sampling Point: WL-BPH-010-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Silt Loam	
3-16	10YR4/2	90	10YR3/6	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-010-UPL
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799010° Long: -77.668266° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-010-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	15	✔	UPL
2. Tilia americana	15	✔	FACU
3. Tsuga canadensis	15	✔	FACU
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	20	✔	FACU
2. Rosa multiflora	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	5	✔	ND
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-010-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silt Loam	
8+							Rock	Rock present below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-011-PSS
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798009° Long: -77.667610° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-011-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	40	✔	FACW
2. Carpinus caroliniana	25	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size: 5©)			
1. Agrostis gigantea	5		FACW
2. Impatiens capensis	10	✔	FACW
3. Lysimachia nummularia	20	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-011-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	7.5YR3/4	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-011-UPL
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798092° Long: -77.667516° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-011-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	15	✔	UPL
2. Tilia americana	15	✔	FACU
3. Acer rubrum	15	✔	FAC
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	20	✔	FACU
2. Berberis thunbergii	15	✔	FACU
3. Lonicera tatarica	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-011-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-012-PEM
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797442° Long: -77.667182° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-012-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	60	✔	FACW
2. Impatiens capensis	10		FACW
3. Typha latifolia	20	✔	OBL
4. Dipsacus fullonum	5		FACU
5. Scirpus atrovirens	5		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-012-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR3/1	80	7.5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-012-PSS
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797496° Long: -77.667252° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is in the floodway and floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): -
Water Table Present?	Yes _____	No _____	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-012-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2. Salix nigra	5		OBL
3. Rosa multiflora	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size: 5©)			
1. Onoclea sensibilis	5		FACW
2. Impatiens capensis	10	✔	FACW
3. Carex sp.	5		75%
4. Clematis virginiana	15	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-BPH-012-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR3/2	95	7.5YR3/4	5	C	M	Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-012-UPL
Investigator(s): DJW, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797272° Long: -77.666891° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-012-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	15	✔	UPL
2. Tilia americana	15	✔	FACU
3. Acer rubrum	15	✔	FAC
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	20	✔	FACU
2. Berberis thunbergii	15	✔	FACU
3. Lonicera tatarica	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 0)			
1. Alliaria petiolata	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-012-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-013-PEM
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782522° Long: -77.725236° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in a saturated lower area surrounded by wooded uplands. Delineation follows dense hydrophytes corresponding to saturated hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-013-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✔	OBL
2. Carex vulpinoidea	20	✔	OBL
3. Solidago sp.	5		ND
4. Phalaris arundinacea	20	✔	FACW
5. Impatiens capensis	10		FACW
6. Onoclea sensibilis	5		FACW
7. Apocynum cannabinum	5		FACU
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-BPH-013-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/1	97.5	10YR3/6	2.5	C	M	Silty Clay Loam	
10-16	10YR5/2	95	10YR3/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ✔ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-013-PSS
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782899° Long: -77.725170° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in a saturated lower area surrounded by wooded uplands. It receives hydrology from the PEM section as well. Delineation follows dense hydrophytes corresponding to saturated hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-013-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	45	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 5')			
1. Poa sp.	10		ND
2. Impatiens capensis	45	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-BPH-013-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/1	85	7.5YR3/4	15	C	M	Silty Clay Loam	
10-16	10YR3/1	95	10YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-014-PEM
Investigator(s): BPH, CML, SNW, ECH, ASH, DJW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783992° Long: -77.724628° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodway and floodplain of two channels. Delineation follows hydrophytic vegetation that differs from upland vegetation. Hydric mucky soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-014-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	25	✔	FACW
2. Phalaris arundinacea	35	✔	FACW
3. Microstegium vimineum	10		FAC
4. Persicaria sagitatta	10		OBL
5. Solidago sp.	5		ND
6. Carex lurida	5		OBL
7. Onoclea sensibilis	5		FACW
8. Euthamia graminifolia	5		FAC
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-BPH-014-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	85	10YR4/6	15	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-015-PEM
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782820° Long: -77.724205° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation followed strong hydric soils, hydrophytes, and surface water throughout. A portion of the wetland is located in a disturbed food plot. Hydric soils and horsetail species were the basis of delineation for this section.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes _____ No ✔ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-015-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20	✔	OBL
2. Onoclea sensibilis	2.5		FACW
3. Impatiens capensis	20	✔	FACW
4. Euthamia graminifolia	2.5		FAC
5. Cyperus esculentus	2.5		FACW
6. Onoclea sensibilis	2.5		FACW
7. Microstegium vimineum	2.5		FAC
8. Persicaria arifolia	20	✔	OBL
9. Equisetum sp.	2.5		100%
10. Phalaris arundinacea	25	✔	FACW
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Equisetum sp. 100% FAC-OBL

SOIL Sampling Point: WL-BPH-015-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	97.5	10YR4/3	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-015-PFO
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782838° Long: -77.724089° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation followed strong hydric soils and hydrophytes. PFO is surrounded by the PEM section. PEM section provides hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, seasonal seeps, and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-015-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-015-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/2	95	7.5YR5/6	5	C	M	Silty Clay Loam	
6-16	10YR5/1	85	7.5YR5/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-016-PEM
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782333° Long: -77.724143° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is confined to an ATV lane and has likely only formed as a result of water running down the lane and settling in the tire ruts. Wetland was delineation due to strong hydric soils in relation to stiltgrass and other limited hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-016-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	70	✔	FAC
2. Carex sp.	10		75%
3. Persicaria sagitatta	10		OBL
4. Persicaria maculosa	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL Sampling Point: WL-BPH-016-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/1	80	5YR3/4	20	C	M	Silty Clay Loam	
6-16	10YR4/2	70	5YR3/4	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-013-16-UPL
Investigator(s): BPH, CML, SNW, ASH, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783061° Long: -77.724499° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-013-016-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	15	✔	FACU
2. Quercus alba	15	✔	FACU
3. Acer rubrum	15	✔	FAC
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	10	✔	FACU
2. Berberis thunbergii	15	✔	FACU
3. Elaeagnus angustifolia	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 0)			
1. Alliaria petiolata	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-BPH-013-016-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-017-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779634° Long: -77.732928° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC), Andover channery loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a floodplain bench. Although the wetland contained some upland plants, it is dominated by obligates and strong hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-017-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Persicaria sagitatta	30	✔	OBL
2. Euthamia graminifolia	30	✔	FAC
3. Microstegium vimineum	30	✔	FAC
4. Cirsium discolor	10		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-017-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y3/2	97.5	10YR3/4	2.5	C	M	Silt Loam	
7-16	2.5Y3/2	90	10YR3/4	5	C	M	Silt Loam	
			10YR3/6	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-018-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779922° Long: -77.733008° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is part of a wetland/channel complex and is confined within the floodway of S-CML-009.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding, a high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-018-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Persicaria sagitatta	25	✔	OBL
2. Euthamia graminifolia	25	✔	FAC
3. Microstegium vimineum	20	✔	FAC
4. Impatiens capensis	15	✔	FACW
5. Lysimachia nummularia	15	✔	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-018-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y3/2	100					Silt Loam	Water at 0 inches
6-16	2.5YR3/2	80	7.5YR3/4	20	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✔ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-019-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780117° Long: -77.733027° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is part of a wetland/channel complex and is confined within the floodway of S-CML-009.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-019-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	65	✔	FAC
2. Impatiens capensis	35	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-019-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y4/1	80	7.5YR3/4	20	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-020-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781098° Long: -77.733360° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is part of a wetland/channel complex and is confined within the floodway of S-CML-009. Delineation followed hydric soils and topographically lower-lying areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-020-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	40	✔	FAC
2. Impatiens capensis	25	✔	FACW
3. Pilea pumila	25	✔	FACW
4. Sambucus nigra	5		FAC
5. Erechtites hieraciifolius	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-020-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y4/1	70	7.5YR3/4	30	C	M	Silt Loam	
14-16	2.5Y3/2	95	2.5Y4/3	5	C	M	Silt Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-021-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781649° Long: -77.733374° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland had formed along the berm where S-CML-009 meets Route 322. It likely receives stormwater runoff. Delineation followed hydric soils and vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-021-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	60	✔	FACW
2. Impatiens capensis	40	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-021-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y3/2	95	10YR5/4	5	C	M	Silt Loam	
4-16	2.5Y4/1	85	7.5Y3/4	10	C	M	Silt Loam	
			10YR5/4	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-017-021-UPL
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779992° Long: -77.732370° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-017-021-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	60	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 10©)			
1. Lonicera japonica	5	✔	FAC
2. Parthenocissus quinquefolia	10	✔	FACU
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-BPH-017-021-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Loam	
2-6	10YR5/4	100					Loam	
6+								Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-022-PEM
Investigator(s): LTZ, BPH, DJW, AHE, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.788906° Long: -77.670623° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a floodplain bench along Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding from Sinking Creek and surface water run off provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-022-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	50	✔	FACW
2. Impatients capensis	20	✔	FACW
3. Boehmeria cylindrica	20	✔	FACW
4. Onoclea sensibilis	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-022-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	85	10YR3/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-023-PEM
Investigator(s): BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789258° Long: -77.670234° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench along Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding from Sinking Creek and surface water run off provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-023-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Persicaria sagittata	25	✔	OBL
3. Boehmeria cylindrica	20	✔	FACW
4. Impatiens capensis	20	✔	FACW
5. Apocynum cannabinum	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-023-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/2	100					Silt Loam	
5-16	10YR4/1	85	10YR3/6	15	D	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-024-PEM
Investigator(s): LTZ, BPH, DJW, AHE, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789697° Long: -77.669469° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a floodplain bench.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding from Sinking Creek and surface water runoff provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-024-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	✔	FACW
2. Boehmeria cylindrica	30	✔	FACW
3. Impatiens capensis	20	✔	FACW
4. Onoclea sensibilis	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-024-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silty Clay Loam	
4-16	10YR4/1	80	10YR3/6	20	D	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-022-024-UPL
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789699° Long: -77.669294° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-022-024-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	10	✔	FACU
2. Fagus grandifolia	10	✔	FACU
3. Tsuga canadensis	5	✔	FACU
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	50	✔	NS
2. Berberis thunbergii	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-BPH-022-024-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	95					Loam	
	10YR4/4	5					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-025-PEM
Investigator(s): LTZ, BPH, AHE, CML, JNS, DJW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778828° Long: -77.778555° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located in the floodway of S-CML-11. Delineation followed jewelweed, topography, and hydric soils. The wetland formed in a depressional area that appears to have been part of an old septic system.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-025-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-025-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	100					Organic Matter	
2-6	10YR2/2	100					Silty Clay Loam	
6-10	GLEY1 4/10Y	70	7.5YR3/4	30	C	M	Clay Loam	
10-16	GLEY1 5/10Y	60					Clay Loam	Mixed Matrix
	10Y-5GY4/2	40						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-BPH-025-UPL
Investigator(s): LTZ, BPH, AHE, CML, JNS, DJW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778860° Long: -77.778332° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-BPH-025-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	25	✔	FACU
2. Acer platanoides	25	✔	UPL
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 5©)			
1. Toxicodendron radicans	10	✔	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-BPH-025-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-001-PEM
Investigator(s): CML, AHE, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781894° Long: -77.713401° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is fueled by mountain seeps that drain down gradient and create wetland hydrology and suitable conditions for hydrophytic vegetation. The delineation followed areas of mainly stiltgrass with other hydrophytic vegetation, but areas are barberry were included. The areas of minor amounts of barberry had adequate hydrology, soils, and other underlying hydrophytic vegetation. There was surface water throughout the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding, and perennial seeps/springs provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-001-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	1		FACU
2. Berberis thunbergii	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	6 = Total Cover		
50% of total cover: 3	20% of total cover: 1.2		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	10		FACW
2. Onoclea sensibilis	20	✔	FACW
3. Carex lurida	15		OBL
4. Impatiens capensis	10		FACW
5. Microstegium vimineum	20	✔	FAC
6. Sphagnum sp.	4		ND
7. Phalaris arundinacea	15		FACW
8.			
9.			
10.			
11.			
	94 = Total Cover		
50% of total cover: 47	20% of total cover: 18.8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined.

SOIL

Sampling Point: WL-CML-001-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/1	80	5YR3/4	20	C	M	Silty Clay Loam	Water at 0 inches
4-16	2.5YR4/1	70	5YR3/4	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 4/13/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-001-PSS
Investigator(s): CML, AHE, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782697° Long: -77.714211° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is fueled by mountain seeps that drain down gradient and create wetland hydrology and suitable conditions for hydrophytic vegetation. The delineation followed areas of mainly stiltgrass with other hydrophytic vegetation, but areas are barberry were included. The areas of minor amounts of barberry had adequate hydrology, soils, and other underlying hydrophytic vegetation. There was surface water throughout the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding, a high water table, and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-001-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Microstegium vinimeum	25	✔	FAC
2. Impatiens capensis	15	✔	FACW
3. Sphagnum sp.	10		ND
4. Solidago sp.	5		ND
5. Phalaris arundinacea	20	✔	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL

Sampling Point: WL-CML-001-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/1	80	5YR3/4	20	C	M	Silty Clay Loam	Water at 0 inches
4-16	2.5YR4/1	70	5YR3/4	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 4/13/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-001-POW
Investigator(s): CML, AHE, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784352° Long: -77.713799° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a bowl-like depression that collects water from the PEM section of the wetland. Delineation followed obvious bowl of surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6-24
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, perennial seeps, and a high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-001-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation around fringe.

SOIL

Sampling Point: WL-CML-001-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-CML-001-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-001-UPL
Investigator(s): CML, AHE, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783312° Long: -77.713466° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-001-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Tsuga canadensis	20	✔	FACU
3. Juglans nigra	5		FACU
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Berberis thunbergii	15	✔	FACU
3. Elaeagnus umbellata	5		NS
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	5	✔	FAC
2. Poa sp.	10	✔	ND
3. Solidago sp.	2.5		ND
4. Daucus carota	2.5		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-001-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/3	100					Silt Loam	
4-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-002-PEM
Investigator(s): LTZ, CML, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779011° Long: -77.732603° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located completely within the floodway and floodplain of S-CML-009-PER. It is a small bench encompassed by the channel and receives hydrology directly from the channel. Delineation followed a pocket of hydrophytic vegetation that differed from upland areas and was in a lower lying area along the channel as well.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-002-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	40	✔	FACW
2. Microstegium vimineum	25	✔	FAC
3. Lysimachia nummularia	25	✔	FACW
4. Alliaria petiolata	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-002-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Silty Clay Loam	
4-16	10YR4/2	85	10YR4/4	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-002-UPL
Investigator(s): LTZ, CML, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779992° Long: -77.732370° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-002-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	60	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 10©)			
1. Lonicera japonica	5	✔	FAC
2. Parthenocissus quinquefolia	10	✔	FACU
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-CML-002-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Loam	
2-6	10YR5/4	100					Loam	
6+								Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-003-PEM
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780652° Long: -77.772134° Datum: WGS-84
Soil Map Unit Name: Opequon-Hagerstown complex (OhD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located completely within the floodway and floodplain of Spring Creek. It is a small bench encompassed by the channel and receives hydrology directly from the channel. Delineation followed a pocket of hydrophytic vegetation that differed from upland areas and was in a lower lying area along the channel as well. It appears it could have previously been within the ordinary high water mark, but is not anymore.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-003-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2. Eupatorium perfoliatum	20	✔	FACW
3. Leersia oryzoides	35	✔	OBL
4. Mimulus sp.	5		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-CML-003-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/3	100					Sandy Loam	
14-18	10YR4/2	90	7.5YR4/4	10	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-003-UPL
Investigator(s): CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780565° Long: -77.771980° Datum: WGS-84
Soil Map Unit Name: Opequon-Hagerstown complex (OhD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-003-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	15	✔	FACU
2. Rosa multiflora	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Securigera varia	5		ND
2. Euthamia graminifolia	15	✔	FAC
3. Daucus carota	15	✔	UPL
4. Cirsium discolor	5		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	20	✔	ND
2.			
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-003-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/3	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-004-PEM
Investigator(s): CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780418° Long: -77.777610° Datum: WGS-84
Soil Map Unit Name: Opequon-Hagerstown complex (OhD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland collects surface water runoff from RT 322. Delineation follows a monoculture of reed canarygrass and saturated hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-004-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	60	✔	FACW
2. Euthamia graminifolia	20	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-004-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/1	100					Silty Clay Loam	
4-16	10YR3/1	80	5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-004-UPL
Investigator(s): CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780418° Long: -77.777610° Datum: WGS-84
Soil Map Unit Name: Opequon-Hagerstown complex (OhD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-004-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	15	✔	OBL
2. Rosa multiflora	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10		FACW
2. Euthamia graminifolia	50	✔	FAC
3. Daucus carota	20	✔	UPL
4. Cirsium discolor	10		UPL
5. Securigera varia	10		ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-CML-004-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-005-PSS
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776982° Long: -77.777070° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench of the adjacent channel. Hydrophytes are dominant.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-005-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	30	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	20	✔	OBL
2. Impatiens capensis	10		FACW
3. Microstegium vimineum	10		FAC
4. Phalaris arundinacea	30	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-005-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR4/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-005-UPL
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777855° Long: -77.777053° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-005-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Trifolium repens	20	✔	FACU
3. Alliaria petiolata	5		FACU
4. Plantago lanceolata	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-005-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-006-PEM
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777290° Long: -77.777119° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench of the adjacent channel. Hydrophytes are dominant and hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-006-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	10		OBL
2. Impatiens capensis	30	✔	FACW
3. Microstegium vimineum	5		FAC
4. Phalaris arundinacea	50	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-006-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-006-UPL
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777855° Long: -77.777053° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-006-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Trifolium repens	20	✔	FACU
3. Alliaria petiolata	5		FACU
4. Plantago lanceolata	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-006-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-007-PSS
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777813° Long: -77.777355° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench of the adjacent channel. Hydrophytes are dominant and hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-007-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	50	✔	FACW
2. Impatiens capensis	5		FACW
3. Solidago sp.	5		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 5©)			
1. Toxicodendron radicans	20	✔	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-CML-007-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	97.5	10YR4/4	2.5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-007-UPL
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777855° Long: -77.777053° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-007-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Trifolium repens	20	✔	FACU
3. Alliaria petiolata	5		FACU
4. Plantago lanceolata	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-CML-007-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-008-PSS
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777766° Long: -77.777093° Datum: WGS-84
Soil Map Unit Name: Philo loam (Ph) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland receives hydrology from surrounding upland habitat and an overflow outlet from a wetland basin above slope. There appears to be an old channel through the wetland. Delineation follows hydrophytes bordering a mowed area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-008-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	20	✔	OBL
2. Rosa multiflora	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Impatiens capensis	20	✔	FACW
3. Solidago sp.	15	✔	ND
4. Carex lurida	2.5		OBL
5. Microstegium vimineum	15	✔	FAC
6. Eupatorium perfoliatum	2.5		FACW
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-008-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR5/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-008-UPL
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777855° Long: -77.777053° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-008-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Trifolium repens	20	✔	FACU
3. Alliaria petiolata	5		FACU
4. Plantago lanceolata	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-008-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-009-PEM
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780443° Long: -77.764525° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from surrounding upland habitat and drainage from a housing development. Delineation follows hydrophytic shrubs like gray dogwood and is open ended into a larger system outside of the study area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✔ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-009-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	30	✔	OBL
2. Juncus effusus	5		FACW
3. Dipsacus fullonum	15		FACU
4. Solidago sp.	30	✔	ND
5. Carex sp.	20	✔	75%
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-009-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/1	85	10YR6/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-009-PSS
Investigator(s): CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780520° Long: -77.764372° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from surrounding upland habitat and drainage from a housing development. Delineation follows hydrophytic shrubs like gray dogwood and is open ended into a larger system outside of the study area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✔ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-009-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus racemosa	50	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	20	✔	OBL
2. Juncus effusus	10	✔	FACW
3. Dipsacus fullonum	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-009-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/1	85	10YR6/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-009-UPL
Investigator(s): CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780430° Long: -77.754506° Datum: WGS-84
Soil Map Unit Name: Nolin silt loam (No) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-009-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	20	✔	FACU
2. Picea abies	20	✔	UPL
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 5©)			
1. Poa sp.	30	✔	ND
2. Solidago sp.	30	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-009-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-010-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775800° Long: -77.740425° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench along the channel and is lower in elevation than the surrounding uplands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-010-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	60	✔	FACW
2. Impatiens capensis	40	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-010-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR5/2	90	10YR6/8	5	C	M	Silty Clay Loam	
			10YR4/4	5	C	M		
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-010-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775630° Long: -77.740514° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-010-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	20	✔	FACU
2. Abies fraseri	20	✔	FACU
3. Pseudotsuga menziesii	15	✔	ND
4.			
5.			
6.			
7.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Solidago altissima	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-010-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-011-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776643° Long: -77.741222° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland has components of both PEM and POW. Wetland is a depression where S-LTZ-070 runs into and collects water. There are hydrophytes and hydric soils and surface water that drains through the culvert under the farm lane.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-8
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-011-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	25	✔	FACW
2. Impatiens capensis	10		FACW
3. Juncus effusus	5		FACW
4. Carex sp.	5		75%
5. Microstegium vimineum	20	✔	FAC
6. Eupatorium perfoliatum	5		FACW
7. Carex vulpinoidea	20	✔	OBL
8. Juncus tenuis	10		FAC
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-CML-011-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR6/1	60	10YR4/6	40	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-011-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776007° Long: -77.740925° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-011-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	20	✔	FACU
2. Abies fraseri	20	✔	FACU
3. Pseudotsuga menziesii	15	✔	ND
4.			
5.			
6.			
7.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Solidago altissima	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-CML-011-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-012-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777018° Long: -77.741503° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of S-LTZ-070. Wetland receives regular hydrology from the channel. The delineation follows depressions in the topography and hydric vegetation that contrasts surrounding uplands. There are basins with surface water and drainages.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-<1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-012-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Juglans nigra	2.5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2.5 = Total Cover		
50% of total cover: 1.25	20% of total cover: 0.5		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Impatiens capensis	15		FACW
3. Juncus effusus	15		FACW
4. Carex lurida	2.5		OBL
5. Microstegium vimineum	2.5		FAC
6. Eupatorium perfoliatum	2.5		FACW
7. Carex vulpinoidea	2.5		OBL
8. Typha latifolia	5		OBL
9. Scirpus cyperinus	2.5		FACW
10. Sagittaria latifolia	20	✔	OBL
11. Solidago sp.	10		ND
	97.5 = Total Cover		
50% of total cover: 48.75	20% of total cover: 19.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-CML-012-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-012-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776007° Long: -77.740925° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-012-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	20	✔	FACU
2. Abies fraseri	20	✔	FACU
3. Pseudotsuga menziesii	15	✔	ND
4.			
5.			
6.			
7.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Solidago altissima	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-CML-012-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-013-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776387° Long: -77.748252° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of the adjacent channel. Wetland receives regular hydrology from the channel. Bench is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-013-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	25	✔	OBL
2. Impatiens capensis	25	✔	FACW
3. Microstegium vimineum	25	✔	FAC
4. Eupatorium perfoliatum	5		FACW
5. Carex lupulina	20	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-013-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	60	5YR4/4	40	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-014-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776234° Long: -77.748049° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of the adjacent channel. Wetland receives regular hydrology from the channel. Bench is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-014-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	35	✔	OBL
2. Impatiens capensis	10		FACW
3. Microstegium vimineum	30	✔	FAC
4. Eupatorium perfoliatum	5		FACW
5. Carex lupulina	20	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-014-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR4/3	80	5YR3/4	20	C	M	Sandy Loam	
8+							Rock	Rock present below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ✔ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-015-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776388° Long: -77.748251° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of the adjacent channel. Wetland receives regular hydrology from the channel. Bench is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-015-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	40	✔	OBL
2. Impatiens capensis	30	✔	FACW
3. Microstegium vimineum	30	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-015-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	85	5YR3/4	15	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-016-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776494° Long: -77.748454° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of the adjacent channel. Wetland receives regular hydrology from the channel. Bench is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-016-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	25	✔	OBL
2. Phalaris arundinacea	25	✔	FACW
3. Phleum pratense	5		FACU
4. Juncus tenuis	10		FAC
5. Carex vulpinoidea	25	✔	OBL
6. Eupatorium perfoliatum	10		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-016-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR3/4	20	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-013-016-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776661° Long: -77.748377° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-013-016-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10	✔	FACU
2. Abies fraseri	5	✔	FACU
3. Pseudotsuga menziesii	5	✔	ND
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Rubus sp.	5		ND
3. Elaeagnus umbellata	15	✔	NS
4. Lonicera tatarica	15	✔	FACU
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	10	✔	ND
2. Solidago altissima	10	✔	FACU
3. Phleum pratense	10	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-013-016-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-017-PEM
Investigator(s): BPH, CML, SNW, ECH, ASH, DJW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783966° Long: -77.725154° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a fringe pocket around a man-made pond. Wetland sits lower in elevation than surrounding yard and is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-017-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	5		FACW
2. Phalaris arundinacea	25	✔	FACW
3. Typha latifolia	30	✔	OBL
4. Carex lurida	10		OBL
5. Euthamia graminifolia	5		FAC
6. Impatiens capensis	20	✔	FACW
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-017-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR5/2	80	2.5YR5/6	20	C	M	Silty Clay Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: 12

Depth (inches): Rock

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-017-POW
Investigator(s): BPH, CML, SNW, ECH, ASH, DJW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783990° Long: -77.725444° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made pond with deep surface water and an inlet from S-LTZ-062.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 2-36
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal flooding and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-017-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	2.5	✔	FACW
2. Phalaris arundinacea	2.5	✔	FACW
3. Typha latifolia	5	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation around fringe.

SOIL

Sampling Point: WL-CML-017-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Unable to take soils due to deep water. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-CML-017-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-018-PSS
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782992° Long: -77.725429° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB, AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a pocket of hydric vegetation and hydric soils that receives hydrology from seeps upslope and S-LTZ-062-INT.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding, a high water table, and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-018-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	50	✔	FACU
2. Elaeagnus umbellata	5		NS
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2. Phalaris arundinacea	20	✔	FACW
3. Carex sp.	5		75%
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-CML-018-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-017-018-UPL
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782937° Long: -77.725389° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB, AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-017-018-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Elaeagnus umbellata	20	✔	NS
3. Lonicera tatarica	2.5		FACU
4. Berberis thunbergii	15	✔	FACU
5.			
6.			
7.			
8.			
9.			
	57.5 = Total Cover		
50% of total cover: 28.75	20% of total cover: 11.5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Trifolium repens	15	✔	FACU
3. Plantago lanceolata	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 5©)			
1. Parthenocissus quinquefolia	2.5	✔	FACU
2.			
3.			
4.			
5.			
	2.5 = Total Cover		
50% of total cover: 1.25	20% of total cover: 0.5		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-017-018-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/3	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-019-PEM
Investigator(s): LTZ, BPH, CML, AHE, SE, SS Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780143° Long: -77.770040° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BxB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench along S-LTZ-077. Delineation follows mucky soils and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal flooding, a high water table, and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-019-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	35	✔	FACW
2. Sagittaria latifolia	25	✔	OBL
3. Carex lurida	10		OBL
4. Microstegium vimineum	10		FAC
5. Acorus calamus	20	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-019-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	90	10YR4/6	10	C	M	Silty Clay Loam	Water at 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-019-UPL
Investigator(s): LTZ, BPH, CML, AHE, SE, SS Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780143° Long: -77.770040° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BxB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-019-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15	✔	FACU
2. Acer saccharum	15	✔	FACU
3. Tsuga canadensis	5		FACU
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Elaeagnus umbellata	15	✔	NS
3. Lonicera tatarica	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Alliaria petiolata	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-CML-019-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-020-PEM
Investigator(s): LTZ, BPH, CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785068° Long: -77.736771° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench. Wetland sits lower in elevation than surrounding corn fields and is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-020-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	10		FACW
2. Phalaris arundinacea	90	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-CML-020-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	95	10YR4/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-CML-020-UPL
Investigator(s): LTZ, BPH, CML, AHE, SE, SS Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785158° Long: -77.736696° Datum: WGS-84
Soil Map Unit Name: Hagerstown silty clay loam (HcC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-CML-020-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10	✔	FACU
2. Acer saccharum	5		FACU
3. Quercus alba	15	✔	FACU
4. Quercus rubra	5		FACU
5. Robinia pseudoacacia	15	✔	FACU
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	10	✔	ND
3. Lonicera tatarica	5	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	5	✔	ND
2. Zea mays	20	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-CML-020-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-001-PEM
Investigator(s): LTZ, DJW, ARL, ERB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778815° Long: -77.718266° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LcD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is the source of S-DJW-001 and is fueled bu seeps. Delineation followed hydric soils and hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-001-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Onoclea sensibilis	20	✔	FACW
2. Dennstaedtia punctilobula	5		FACU
3. Microstegium vinimeum	70	✔	FAC
4. Impatiens capensis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-DJW-001-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y4/2	95	10YR4/6	5	C	M	Silt Loam	
4-16	2.5Y5/2	80	10YR4/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: State College / Centre Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-001-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779064° Long: -77.718146° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LcD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-001-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Acer rubrum	15	✔	FACU
3. Quercus montana	5		UPL
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	15	✔	FACU
2. Acer pensylvanicum	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	20	✔	FACU
2. Alliaria petiolata	5		FACU
3. Microstegium vimineum	10	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 10©)			
1. Vitis sp.	5	✔	ND
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-DJW-001-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y5/3	100					Silty Clay Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-002-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779022° Long: -77.719013° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is fueled by a hillside seep. There is a possible hydrologic connection to S-DJW-001

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes ✔	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A seasonal high water table, seasonal/perennial seeps, and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-002-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex sp.	5		75%
2. Dennstaedtia punctilobula	10		FACU
3. Microstegium vinimeum	15	✔	FAC
4. Sphagnum sp.	30	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	40	✔	FAC
2.			
3.			
4.			
5.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-DJW-002-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3							Organic Matter	
3-16	2.5Y3/1	90	10YR3/6	10	C	M	Silty Clay Loam	Water at 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-002-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779159° Long: -77.718810° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-002-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Acer rubrum	15	✔	FACU
3. Quercus montana	5		UPL
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	15	✔	FACU
2. Acer pensylvanicum	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	20	✔	FACU
2. Alliaria petiolata	5		FACU
3. Microstegium vimineum	10	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	5	✔	ND
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-DJW-002-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y5/3	100					Silty Clay Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-003-PEM
Investigator(s): DJW, LTZ, BPH, AHE, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778579° Long: -77.769676° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is within the floodway and floodplain of S-LTZ-077-PER. Delineation follows hydric soils and wetland vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A seasonal high water table, seasonal flooding, and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-003-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Rumex crispus	5		FAC
2. Solidago sp.	5		ND
3. Microstegium vinimeum	20	✔	FAC
4. Impatiens capensis	70	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-DJW-003-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Sandy Loam	
3-10	10YR3/2	90	10YR3/6	10	C	M	Sandy Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-003-UPL
Investigator(s): DJW, LTZ, BPH, AHE, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778579° Long: -77.769676° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-003-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rubus sp.	5	✔	ND
2. Lonicera tatarica	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	25	✔	ND
2. Alliaria petiolata	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1. Vitis sp.	25	✔	ND
2. Parthenocissus quinquefolia	5		FACU
3.			
4.			
5.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-DJW-003-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/3	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-004-PEM
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782910° Long: -77.724848° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench of S-LTZ-058-PER. Wetland sits lower in elevation than surrounding uplands and is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-<1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table, seasonal flooding, and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-004-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Phalaris arundinacea	10		FACW
3. Carex sp.	20	✔	75%
4. Microstegium vimineum	15		FAC
5. Onoclea sensibilis	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	15	✔	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-DJW-004-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR3/6	10	C	M	Silty Clay Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-004-UPL
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782937° Long: -77.725389° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-004-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2. Elaeagnus umbellata	10		NS
3. Berberis thunbergii	25	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

SOIL Sampling Point: WL-DJW-004-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/3	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-005-PEM
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783536° Long: -77.724771° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a floodplain bench of S-LTZ-058-PER. Wetland sits lower in elevation than surrounding uplands and is dominated by hydrophytes and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-<1
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-005-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Onoclea sensibilis	20	✔	FACW
3. Carex sp.	20	✔	75%
4. Microstegium vimineum	20	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-DJW-005-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR3/6	10	C	M	Silty Clay Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/24/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-DJW-005-UPL
Investigator(s): DJW, BPH, CML, SNW, CEH, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782535° Long: -77.724755° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-DJW-005-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2. Elaeagnus umbellata	10		ND
3. Berberis thunbergii	25	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-DJW-005-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/3	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-001-PEM
Investigator(s): LTZ, BPH, ALB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799340° Long: -77.642466° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn), Tyler silt loam (Ty) NWI classification: PFO1/SS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

A portion of the wetland is located in a mowed pasture. Wetland begins at the toe of a large slope with wetland features becoming stronger within the floodplain of S-LTZ-001-PER. Delineation followed stark contrast between soils with redoximorphic features and those without, microtopographic break, and hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 0-4
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps, surface water runoff, seasonal flooding from S-LTZ-001-PER, and seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-001-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Juncus tenuis	20	✔	FAC
2. Onoclea sensibilis	5		FACW
3. Typha latifolia	5		OBL
4. Carex sp.	10		75%
5. Juncus effusus	5		FACW
6. Scirpus cyperinus	10		FACW
7. Phalaris arundinacea	30	✔	FACW
8. Carex stricta	15	✔	OBL
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp - 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-001-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	10YR3/6	10	C	M	Silty Clay Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-001-PSS
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799775° Long: -77.642084° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: PFO1/SS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed dense stand of C. amomum, microtopographic break where S-LTZ-001 over tops its bank, as evidenced by sediment deposits, drift deposits, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-001-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	40	✔	FACW
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 5©)			
1. Rumex crispus	10	✔	FAC
2. Phalaris arundinacea	10	✔	FACW
3. Lysimachia nummularia	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-001-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	85	7.5YR3/4	15	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-001-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797826° Long: -77.642026° Datum: WGS-84
Soil Map Unit Name: Tyler silt loam (Ty), Edom silt loam (EdC, EdD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-001-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	30	✔	ND
2. Daucus carota	20	✔	UPL
3. Festuca arundinacea	5		NS
4. Asclepias syriaca	20	✔	FACU
5. Dichanthelium clandestinum	20	✔	FAC
6. Plantago lanceolata	5		UPL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-001-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/3	100					Silt Loam	
6-16	10YR4/3	80					Silt Loam	
	10YR4/4	20					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-002-PSS
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799730° Long: -77.642634° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: PFO1/SS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is located within the floodplain of S-LTZ-001. Delineation followed dense stand of C. amomum, which is not present in upland areas, microtopographically low-lying areas where water accumulates as evidenced by saturation and surface waters, and soils with redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and a seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-002-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	15	✔	FACW
2. Phalaris arundinacea	15	✔	FACW
3. Lysimachia nummularia	15	✔	FACW
4. Solidago sp.	5		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-002-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR3/6	10	C	M	Silty Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-002-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799730° Long: -77.642634° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-002-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-002-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR3/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-003-PSS
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799225° Long: -77.643496° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed dense stand of C. amomum, microtopographic break where S-LTZ-001 over tops its bank, as evidenced by sediment deposits, drift deposits, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Routine flooding from S-LTZ-001-PER and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-003-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	45	✔	FACW
2. Salix nigra	15	✔	OBL
3. Acer negundo	15	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-003-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/2	97.5	10YR3/4	2.5	C	M	Silt Loam	Silt loam with gravel
10-16	10YR3/2	85	10YR3/4	15	C	M	Silt Loam	Silt loam with gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-003-UPL
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799730° Long: -77.642634° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-003-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-003-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR3/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-004-PEM
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796551° Long: -77.639063° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

A portion of the wetland is located in a grazed pasture in a drainage/valley. Delineation followed drainage patterns, surface water, and creeping buttercup, which contrast with the surrounding uplands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps, surface water runoff, a seasonal high water table, and stormwater runoff from a roadway provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-004-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Rumex crispus	10		FAC
2. Phalaris arundinacea	10		FACW
3. Poa sp.	40	✔	ND
4. Ranunculus repens	40	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-004-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	90	10YR4/3	10	C	M	Silt loam	
4-16	10YR4/3	100					Silt loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-004-UPL
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799730° Long: -77.642634° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mn) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-004-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	35	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	10	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	20	✔	FACU
2. Poa sp.	35	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No status

*Plants not identified to species level or without an indicator status were not included in Dominance Test.

SOIL Sampling Point: WL-LTZ-004-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/3	100					Silt Loam	
3-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-005-PEM
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795210° Long: -77.643879° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is almost entirely located in a highly disturbed, grazed horse pasture. Delineation followed microtopography, hydric soils with oxidized rhizospheres, and evidence of persistent hydrology (saturation and surface water). Conditions were inordinately saturated due to recent precipitation/time of year.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-005-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Juncus tenuis	45	✔	FAC
2. Trifolium repens	15		FACU
3. Poa sp.	40	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-005-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR3/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-005-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795328° Long: -77.643551° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-005-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	95	✔	ND
2. Plantago lanceolata	5		UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-005-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	90	10YR4/3	10	C	M	Silt Loam	
4-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-006-PEM
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793512° Long: -77.638831° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located at the base of a valley in a "bowl-shaped" geomorphic position where water collects. Delineation followed soils with redoximorphic features and hydrology (surface water and saturation). Phalaris was confined to the wetland core.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-006-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	45	✔	FACW
2. Microstegium vimineum	45	✔	FAC
3. Poa sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL

Sampling Point: WL-LTZ-006-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2						Silty Clay Loam	
8-16	10YR5/2	95	10YR4/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-006-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795328° Long: -77.643551° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-006-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus sp.	5		ND
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2. Gleditsia triacanthos	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	30	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-006-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/3	100					Silt Loam	
3-6	10YR4/3	100					Silt Loam	
6-16	10YR5/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-007-PEM
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793763° Long: -77.638901° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation followed soils with redoximorphic features, saturation, and drainage patterns. WL-LTZ-007 would likely be connected to WL-LTZ-006 if not for the road dividing them.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-007-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	45	✔	FACW
2. Microstegium vimineum	45	✔	FAC
3. Cornus amomum	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-007-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	90	7.5YR3/4	10	C	M	Silty Clay Loam	
8-16	2.5Y5/2	95	10YR5/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-007-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795328° Long: -77.643551° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-007-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus sp.	5		ND
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2. Gleditsia triacanthos	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	30	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-007-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/3	100					Silt Loam	
3-6	10YR4/3	100					Silt Loam	
6-16	10YR5/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-008-PEM
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793710° Long: -77.643064° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is partially located within a bowl-shaped geomorphic position and connects to a seep in an adjacent field. Delineation followed dense stand of cattails and other hydrophytic vegetation, mucky and hydric soils, saturation and surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-4
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps originating from an upslope pond, seasonal seeps, seasonal high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-008-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	50	✔	OBL
2. Carex lurida	40	✔	OBL
3. Epilobium sp.	10		NS
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-008-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	95	10YR3/6	5	C	M	Silt Loam	
4-16	GLEY1 4/10Y	97.5	5Y5/4	2.5	C	M	Clay Loam	Water at 6 inches.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-008-PSS
Investigator(s): LTZ, BPH, SNW, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793685° Long: -77.643140° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a floodplain bench connected to WL-LTZ-008-PEM. Delineation followed obvious microtopographic break between the floodway of S-LTZ-006-PER and adjacent uplands, as well as dense stand of C. amomum.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-006-PER, perennial seeps, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-008-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2. Salix nigra	10		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Carex stricta	10	✔	OBL
2. Packera aurea	10	✔	FACW
3. Microstegium vimineum	20	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-008-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Silt Loam	
2-16	10YR3/2	85	7.5YR3/4	15	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ✔ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-008-POW
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793382° Long: -77.643021° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made pond. Delineation follows obvious surface water and a constructed berm.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 24-48
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-008-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	15	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10	✔	FACW
2. Epilobium sp.	10	✔	NS
3. Microstegium vimineum	10	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

-Vegetation around fringe of POW system.

SOIL Sampling Point: WL-LTZ-008-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

-Soils not taken - no transition zone between open water and surrounding uplands. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-008-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-008-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795328° Long: -77.643551° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-008-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus sp.	5		ND
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2. Gleditsia triacanthos	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	30	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-008-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/3	100					Silt Loam	
3-6	10YR4/3	100					Silt Loam	
6-16	10YR5/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-009-PSS
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793347° Long: -77.642525° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB), Andover very stony loam (Ao) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed obvious microtopographic break between the floodway of S-LTZ-006-PER and adjacent uplands, dense stand of C. amomum, saturation, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-006-PER and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-009-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	35	✔	FACW
2. Elaeagnus umbellata	10		NS
3. Rosa multiflora	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Carex stricta	10	✔	OBL
2. Impatiens capensis	10	✔	FACW
3. Microstegium vimineum	15	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

SOIL Sampling Point: WL-LTZ-009-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR3/2	85	5YR3/4	15	C	M	Silty Clay Loam	Water at 6 inches.
14-16	10YR4/1	85	5YR3/4	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-009-UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795328° Long: -77.643551° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-009-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus sp.	5		ND
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2. Gleditsia triacanthos	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	30	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-009-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/3	100					Silt Loam	
3-6	10YR4/3	100					Silt Loam	
6-16	10YR5/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-010-PEM
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799571° Long: -77.657312° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC), Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is located within a grazed pasture, which seems to be inhibiting hydrophytic vegetation growth. Delineation followed evidence of hydrology, (saturation, surface water), dense clusters of R. repens, low-lying areas that hold and convey water, and soils with redoximorphic features (although these were weak in some areas).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-008-INT and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-010-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Ranunculus repens	35	✔	FAC
2. Poa sp.	35	✔	ND
3. Epilobium sp.	15		ND
4. Phalaris arundinacea	15		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

-Vegetation is routinely grazed.

SOIL

Sampling Point: WL-LTZ-010-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y4/2	100					Silt Loam	Water at 4 inches
8-16	10YR4/2	95	10YR3/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 1/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-010-PSS
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799097° Long: -77.657659° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located at the base of a valley/slope that drains S-LTZ-008-INT. Delineation followed dense stand of Alder and C. amomum, saturation, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-008-INT and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-010-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Alnus serrulata	15	✔	OBL
2. Cornus amomum	50	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size: 5©)			
1. Ranunculus repens	35	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-010-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y4/3	100					Silt Loam	
12-16	2.5Y5/2	90	2.5Y5/3	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-011-PEM
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799420° Long: -77.655885° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland originates in and drains from a topographically low-lying, bowl-shaped area that appears to have been an old pond. Delineation followed obvious break between hydrophytes and upland plants, surface water, saturation, and mucky soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a perennial high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-011-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	10		OBL
2. Solanum dulcamara	30	✔	FAC
3. Acorus americanus	15		OBL
4. Phalaris arundinacea	45	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-011-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR2/1	100					Silt loam	
3-16	10Y3/1	85	10YR3/4	10	C	M	Silty Clay Loam	Water at 4 inches
			2.5Y4/3	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-011-PSS
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798987° Long: -77.655967° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland originates in and drains from a topographically low-lying, bowl-shaped area that appears to have been an old pond. Delineation followed dense stand of C. amomum, obvious break between hydrophytes and upland plants, surface water, saturation, and mucky soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a perennial high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-011-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	45	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Impatiens capensis	15	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-011-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/1	80	5YR3/4	20	C	M	Silty Clay Loam	Water at 4 inches
4-16	10YR4/1	80	7.5YR3/4	10	C	M	Silty Clay Loam	
			2.5Y4/3	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-011-PFO
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800049° Long: -77.655542° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland originates in and drains from a topographically low-lying, bowl-shaped area that appears to have been an old pond. Delineation followed dense stand of A. serrulata, obvious break between hydrophytes and upland plants, drainage patterns, saturation, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial and seasonal seeps, overflow from POW system, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-011-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus serrulata	50	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-011-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Silty Clay Loam	
6-16	10YR4/1	90	10YR4/3	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-011-POW
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800352° Long: -77.655247° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a man-made POW system located within the WL-LTZ-011 complex. Delineation followed obvious edge of open water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 24-48+
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-011-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	20	✔	OBL
2. Verbena hastata	5		FACW
3. Juncus effusus	5		FACW
4. Phalaris arundinacea	30	✔	FACW
5. Scirpus sp.	5		ND
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-011-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Soils not taken. POW system was encompassed by the WL-LTZ-011 complex. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-011-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-010/11 UPL
Investigator(s): LTZ, BPH, CML, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799097° Long: -77.657659° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-010/11 UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus americana	25	✔	FACU
2. Pinus sylvestris	25	✔	NS
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-010/11 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-012-PEM
Investigator(s): LTZ, CEH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800418° Long: -77.651068° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is an emergent floodplain bench elevated above the ordinary high water mark; heavy sediment deposits evident; most of channel is incised, so wetland plants are more likely to take hold here than the stream bank, which is elevated even more.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and a seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-012-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Ranunculus repens	25	✔	FAC
2. Onoclea sensibilis	40	✔	FACW
3. Scirpus cyperinus	15		FACW
4. Lysimachia nummularia	15		FACW
5. Alnus serrulata	5		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-012-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	90	7.5YR4/6	5	C	M	Silty Clay Loam	
			5YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/12/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-012-UPL
Investigator(s): LTZ, CEH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800418° Long: -77.651068° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-012-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Quercus alba	15	✔	FACU
3. Fagus grandifolia	15	✔	FACU
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Rubus allegheniensis	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	20	✔	FACU
2. Arctium minus	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-012-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-013-PSS
Investigator(s): LTZ, CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800713° Long: -77.651324° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed hydrophytic vegetation, soils with redoximorphic features, and obvious topographic break where water over tops the stream bank, as evidenced by saturation and drift deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and a seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-013-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	40	✔	OBL
2. Cornus amomum	15	✔	FACW
3. Rosa palustris	15	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-013-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silty Clay Loam	
4-16	10YR3/2	90	5YR3/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-014-PFO
Investigator(s): LTZ, CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800363° Long: -77.650001° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed hydrophytic vegetation, soils with redoximorphic features, and obvious topographic break where water over tops the stream bank, as evidenced by saturation and drift deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and a seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-014-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	30	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	30	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Carex stricta	15	✔	OBL
2. Symplocarpus foetidus	15	✔	OBL
3. Onoclea sensibilis	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-014-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Silty Clay Loam	
6-16	10YR3/2	90	5YR3/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-015-PFO
Investigator(s): LTZ, CML, CEH, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800184° Long: -77.650070° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed hydrophytic vegetation, soils with redoximorphic features, and obvious topographic break where water over tops the stream bank, as evidenced by saturation and drift deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and a seasonal high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-015-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	35	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	35	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	15	✔	FACW
2. Rumex crispus	15	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-015-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Silty Clay Loam	
6-16	10YR3/2	95	10YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-016-PEM
Investigator(s): LTZ, BPH,CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798616° Long: -77.647330° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows dense stand of tussock sedge coinciding with the hydric soils and obvious hydrology indicators (surface water and saturation), as well as a topographic break at the edge of the floodplain.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-3
Water Table Present? Yes ✔ No _____ Depth (inches): 3
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from LTZ-001-PER, surface water run-off, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-016-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex stricta	15		FACW
2. Symplocarpus foetidus	5		OBL
3. Typha latifolia	20	✔	OBL
4. Juncus effusus	10		FACW
5. Onoclea sensibilis	15		FACW
6. Equisetum sp.	15		100%
7. Lysimachia nummularia	5		FACW
8. Iris pseudacorus	15		OBL
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Equisetum sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-016-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	95	10YR3/6	5	C	M	Silty Clay Loam	Water at 3 inches
12-16	10YR5/1	90	10YR5/6	5	C	M	Silty Clay Loam	
			10YR3/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-016-PSS
Investigator(s): LTZ, BPH, CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799752° Long: -77.649002° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS1C/PSS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is located within the floodplain of S-LTZ-001-PER and is connected to WL-LTZ-016-PEM. Delineation followed dense stand of C. amomum, soils with redoximorphic features, water marks, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER, seasonal seeps, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-016-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	40	✔	FACW
2. Rosa palustris	10	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Carex stricta	20	✔	OBL
3. Lysimachia nummularia	5		FACW
4. Onoclea sensibilis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-016-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	97.5	10YR4/6	2.5	C	M	Silty Clay Loam	
4-16	10YR4/2	85	10YR4/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-017-PSS
Investigator(s): LTZ, CML, CEH, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800104° Long: -77.648492° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed hydrophytic vegetation, soils with redoximorphic features, and obvious topographic break where water over tops the stream bank, as evidenced by saturation and drift deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-017-PSS

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	25	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2. Rosa multiflora	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10	✔	FACW
2. Juncus effusus	5	✔	FACW
3. Ranunculus repens	5	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-017-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR3/2	100					Silty Clay Loam	
7-16	10YR3/2	95	5YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-018-PFO
Investigator(s): LTZ, CML, BPH, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800086° Long: -77.648049° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is a floodplain bench. Delineation followed hydrophytic vegetation, soils with redoximorphic features, and obvious topographic break where water over tops the stream bank, as evidenced by saturation and drift deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from S-LTZ-001-PER and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-018-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	45	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	15	✔	FACW
2. Bacopa monnieri	5		OBL
3. Carex sp.	5		ND
4. Ranunculus repens	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-018-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	95	5YR5/6	5	C	M	Silty Clay Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-019-PEM
Investigator(s): LTZ, BPH, CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800400° Long: -77.649243° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland system is located within the floodplain of S-LTZ-001-PER and is entirely mowed. The delineation follows dominant (although disturbed) hydrophytic vegetation, microtopographic low-lying area, and hydric soils. Multiple test pits were dug throughout the wetland and likely contain fluvial deposits.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding from LTZ-001-PER, surface water runoff, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-019-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex stricta	70	✔	OBL
2. Phalaris arundinacea	20	✔	FACW
3. Juncus effusus	5		FACW
4. Poa sp.	5		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-019-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	80	10YR3/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

The soil core was taken in a low-lying area. In the non-low-lying areas, (outside defined drainage areas), the soils were predominantly:

0-12 - 10YR 4/2

12-16 - 10YR 4/2 w/ 5YR 3/4 at 10% redox concentrations.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-013-019 UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.800059° Long: -77.650241° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-013-019 UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	5		FAC
2. Juglans nigra	30	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	15	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	20	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-013-019 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-020-PEM
Investigator(s): LTZ, BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792196° Long: -77.650880° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The source of hydrology for the wetland system is a perennial seasonal seep at the base of the valley. The delineation followed obvious off-site hydrophytic vegetation, mucky hydric soils, and topography. The wetland system drains into a ponded water system (POW).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal and perennial seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-020-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	40	✔	OBL
2. Onoclea sensibilis	20	✔	FACW
3. Persicaria sagittata	5		FACW
4. Phalaris arundinacea	20	✔	FACW
5. Epilobium ciliatum	5		FAC
6. Scirpus cyperinus	5		FACW
7. Impatiens capensis	5		FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-020-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	5YR3/4	5	C	M	Silty Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-020-PSS
Investigator(s): LTZ, BPH, CML, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792357° Long: -77.650974° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The source of hydrology for the wetland system is a perennial seasonal seep at the base of the valley. The delineation followed obvious off-site hydrophytic vegetation, mucky hydric soils, and topography. The wetland system drains into a ponded water system (POW).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal and perennial seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-020-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	70	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	15	✔	FAC
2. Onoclea sensibilis	10	✔	FACW
3. Impatiens capensis	5		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-020-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	5YR3/4	5	C	M	Silty Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-020-PFO
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793080° Long: -77.650534° Datum: WGS-84
Soil Map Unit Name: Quarry (QU), Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland follows drainage patterns, sparsely vegetated concave surfaces, water-stained leaves, and obvious signs of hydrology such as surface water that corresponds with season and perennial seeps.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial and seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-020-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	35	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	40 (A)		125 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-020-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Silt Loam	Water at 2 inches
2-16	10YR4/1	95	10YR3/6	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-021-PEM
Investigator(s): LTZ, BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793771° Long: -77.651164° Datum: WGS-84
Soil Map Unit Name: Quarry (QU) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is located within a bowl-shaped geomorphic position within a gravel spoil area. Water is likely retained year-round due to impervious compacted gravel. The delineation followed surface water and a dense stand of cattails. Soils appeared to be disturbed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-12
Water Table Present? Yes ✔ No _____ Depth (inches): 3
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-021-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	90	✔	OBL
2. Carex lurida	10		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-021-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silt loam	Water at 3 inches
4-5	10YR3/2	95	10YR 4/4	5	C	M	Silt loam	
5+							Compacted Gravel	Compacted Gravel below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted Gravel

Depth (inches): 5

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Soils appeared disturbed due to compacted gravel.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-021-PSS
Investigator(s): LTZ, BPH, CML, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793653° Long: -77.651260° Datum: WGS-84
Soil Map Unit Name: Quarry (QU) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is located within a bowl-shaped geomorphic position within a gravel spoil area. Water is likely retained year-round due to impervious compacted gravel. The delineation followed black willow stands, moss trim lines, and saturated soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-12
Water Table Present? Yes ✔ No _____ Depth (inches): 3
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-021-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	85	✔	OBL
2. Elaeagnus umbellata	10		NS
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

SOIL

Sampling Point: WL-LTZ-021-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silt Loam	Water at 3 inches
4-5	10YR3/2	95	10YR4/4	5	C	M	Silt Loam	
5+							Gravel	Gravel below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Soils appeared disturbed due to compacted gravel.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 01/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-020-021 UPL
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792568° Long: -77.650821° Datum: WGS-84
Soil Map Unit Name: Quarry (QU), Edom silt loam (EdD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-020-021 UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	5		FACU
2. Rosa multiflora	55	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	10	✔	FACU
2. Solidago sp.	5	✔	ND
3. Poa sp.	5	✔	ND
4. Phytolacca americana	5	✔	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-020-021 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-022-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797811° Long: -77.652297° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is located in a valley down slope of ponded water (POW). The delineation followed a topographically low-lying area corresponding with drainage patters, reed canary grass and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-022-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	85	✔	FACW
2. Typha latifolia	5		OBL
3. Verbena hastata	5		FACW
4. Carex lurida	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-022-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	90	7.5YR 3/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-022-POW
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797284° Long: -77.650840° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made pond located up slope and hydrologically connected to WL-LTZ-022-PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 12-60+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-022-POW

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	30	✔	OBL
2. Phalaris arundinacea	30	✔	FACW
3. Lemna minor	30	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

-Vegetation around fringe of POW system is mowed.

SOIL

Sampling Point: WL-LTZ-022-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/1	67	7.5YR3/4	33	C	M	Silt Loam	
5+							Gravel	Gravel below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 5

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-022-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797811° Long: -77.652297° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-022-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	35	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Solidago lepida	35	✔	FACU
2. Alliaria petiolata	10		FACU
3. Zea mays	10		NS
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

SOIL Sampling Point: WL-LTZ-022-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-023-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797896° Long: -77.647691° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

The wetland is a "jewelweed pocket" located in a concave area connected to 023-POW. The delineation followed the edge of concave area, saturated soils, and soils with a hydrogen sulfide odor.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No ____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and a seasonally high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-023-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-023-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR2/1	100					Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-023-PSS
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797897° Long: -77.645957° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The wetland is receiving outflow from the POW section. Delineation follows a lower area along the road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, perennial seeps, and a perennial high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-023-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	25	✔	FACW
2. Sambucus nigra	10		FAC
3. Salix nigra	25	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	10	✔	FACW
2. Typha latifolia	20	✔	OBL
3. Phalaris arundinacea	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-023-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR2/1	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-023-POW
Investigator(s): LTZ, CML, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797843° Long: -77.646846° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PAB3Fh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:
The delineation followed obvious surface water / edge of constructed pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 12-60
Water Table Present? Yes ____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-023-POW

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	80	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Lemna minor	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-023-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/1	67	7.5YR3/4	33	C	M	Silt loam	
5+							Rock	Rock below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-023-PEM-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797581° Long: -77.647363° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-023-PEM-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra	80	✔	FACU
2. Acer platanoides	10		FACU
3.			
4.			
5.			
6.			
7.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-023-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-024-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793567° Long: -77.660354° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx), Weikert channery silt loam (WeD) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located in a valley. The delineation follows drainage patterns coinciding with obvious hydrophytes and saturated mucky soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a seasonally high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-024-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	80	✔	FACW
2. Impatiens capensis	10		FACW
3. Juncus effusus	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-024-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	90	5YR3/4	10	C	M	Silty Clay Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-024-PEM-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793637° Long: -77.659201° Datum: WGS-84
Soil Map Unit Name: Weikert channery silt loam NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-024-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	5	✔	FACU
2. Malus sylvestris	5	✔	UPL
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	35	✔	FACU
2. Berberis thunbergii	35	✔	FACU
3. Lonicera tatarica	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	5	✔	ND
2. Solidago sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-024-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-025-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795204° Long: -77.657672° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) (EdB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland originates from an artesian well. The delineation followed break between dense hydrophytes, soils, with strong redox concentrations as well as drainage patterns. The wetland is surrounded by agriculture fields and goes diffuse.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Drainage from a nearby well and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-025-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-025-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					Silt Loam	Water at 0 inches
6-16	10YR4/2	75	2.5YR3/4	25	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-026-PEM
Investigator(s): LTZ, BPH, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794386° Long: -77.650619° Datum: WGS-84
Soil Map Unit Name: Weikert shaly silt loam (WeC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located in a bowl-shaped depression area. The delineation followed dense hydrophytic vegetation, saturation, surface water, soils with redox features and or oxidized rhizospheres, and microtopography.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-026-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	75	✔	FACW
2. Scirpus cyperinus	15		FACW
3. Carex lurida	5		OBL
4. Salix sp.	5		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-026-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/1	90	5YR3/4	10	C	M	Silt Loam	Water at 2 inches; rock at 4 inches.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-027-PEM
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797546° Long: -77.653728° Datum: WGS-84
Soil Map Unit Name: Brinkerton silt loam (BrA), Dunning silt clay loam (Du), Ernest channery silt loam (ErC) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located in a valley setting. The delineation followed a topographically low-lying area (bottom of valley) which coincided with mucky soils with a hydrogen sulfide odor, dense hydrophytes, and saturation/surface water as well as drainage patterns.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-3
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a seasonal high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-027-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Typha latifolia	5		OBL
3. Carex lurida	5		OBL
4. Impatiens capensis	5		FACW
5. Onoclea sensibilis	5		FACW
6. Aster sp.	10		ND
7. Acorus calamus	30	✔	OBL
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-027-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/1	90	10YR3/6	5	C	M	Silt Loam	Water at 4 inches
			5YR3/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-028-PEM
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797917° Long: -77.654581° Datum: WGS-84
Soil Map Unit Name: Dunning silt clay loam (Du), Ernest channery silt loam (ErC) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is connected to WL-LTZ-027-PEM and divided by a driveway. The delineation follows a sharp topographic break, dense stands of cattails, and mucky/hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-3
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, seasonal highwater tables, and surface water run-off provide the hydrology to the wetland. The wetland is also located down-gradient of, and receives hydrology from WL-LTZ-027-PEM.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-028-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	15		FACW
2. Typha latifolia	70	✔	OBL
3. Acorus calamus	15		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-028-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR2/2	100					Silt Loam	Water at 4 inches
4-16	10YR3/1	80	10YR3/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✔ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-028-PSS
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7980593° Long: -77.655429° Datum: WGS-84
Soil Map Unit Name: Dunning silt clay loam (Du), Ernest channery silt loam (ErC) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation followed a small pocket of silky dogwood along the pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-028-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-028-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/1	40	10YR4/2	50	C	M	Silt Loam	Water at 6 inches
			10YR3/6	10	C	M	Silt Loam	
4-16	10YR4/2	90	2.5YR4/3	5	C	M	Clay Loam	
			10YR3/6	5	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-028-POW
Investigator(s): LTZ, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798141° Long: -77.655109° Datum: WGS-84
Soil Map Unit Name: Dunning silt clay loam (Du), Ernest channery silt loam (ErC) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The delineation followed obvious surface water and evidence of inundation (i.e. water marks).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 4-36
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-028-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	90	✔	OBL
2. Phalaris arundinacea	5		FACW
3. Carex lurida	5		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation was observed around the fringe of the pond.

SOIL

Sampling Point: WL-LTZ-028-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/1	40	10YR4/2	50	C	M	Silt Loam	Water at 6 inches
			10YR3/6	10	C	M	Silt Loam	
4-16	10YR4/2	90	2.5YR4/3	5	C	M	Clay Loam	
			10YR3/6	5	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ✔ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Soil pits were only taken on the outermost fringe of the POW strata. These soil are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-028-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-025-28 UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797811° Long: -77.652297° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-025-28 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	35	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Solidago lepida	35	✔	FACU
2. Alliaria petiolata	10		FACU
3. Zea mays	10		NS
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

SOIL

Sampling Point: WL-LTZ-025-28 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-029-PEM
Investigator(s): LTZ, BPH, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5-10
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799067° Long: -77.661764° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB), Edom silt loam (EdB, EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located within a drainage swale between two agriculture fields. The delineation followed drainage hydrophytes, soils with redox features, saturation, and surface water, which contrasted with the adjacent agriculture fields.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-3
Water Table Present?	Yes ✔	No _____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-029-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	70	✔	FACW
2. Typha latifolia	5		OBL
3. Carex stricta	5		OBL
4. Impatiens capensis	5		FACW
5. Barbarea vulgaris	5		FACU
6. Verbena hastata	5		FACW
7. Epilobium ciliatum	5		FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-029-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					Silty Clay Loam	Water at 3 inches
6-16	10YR4/2	90	10YR3/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/02/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-029-PEM-UPL
Investigator(s): LTZ, BPH, LMG Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798900° Long: -77.662285° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB), Edom silt loam (EdB, EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-029-PEM-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Dipsacus fullonum	70	✔	FACU
2. Phleum pratense	25	✔	FACU
3. Solidago sp.	5		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-029-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-030-PEM
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789604° Long: -77.667896° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PEM followed a line of seasonal/perennial seeps within the floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 8
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table, seasonal flooding, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-030-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	15		FACW
2. Carex stricta	5		OBL
3. Phalaris arundinacea	20	✔	FACW
4. Onoclea sensibilis	15		FACW
5. Persicaria sagittata	5		OBL
6. Epilobium sp.	15		100%
7. Scirpus cyperinus	5		FACW
8. Vernonia noveboracensis	5		FACW
9. Solidago sp.	15		ND
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Epilobium sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-030-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	10YR5/6	5	C	M	Silty Clay Loam	Water at 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-030_PEM-UPL
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789188° Long: -77.666952° Datum: WGS-84
Soil Map Unit Name: Purdy silt loam (Pu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-030_PEM-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	15	✔	FACU
2. Acer saccharum	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	15	✔	FACU
2. Ligustrum vulgare	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Microstegium vimineum	15	✔	FAC
3. Daucus carota	5		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-030_PEM-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-030-PSS
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789823° Long: -77.666338° Datum: WGS-84
Soil Map Unit Name: Purdy silt loam (Pu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
PSS areas followed dense stands of silky dogwood.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 8
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, a perennial high water table, and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-030-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	25	✔	FACW
2. Alnus sp.	10	✔	75%
3. Elaeagnus umbellata	15	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	5		FACW
2. Solidago sp.	5		ND
3. Phalaris arundinacea	30	✔	FACW
4. Onoclea sensibilis	5		FACW
5. Persicaria sagittata	5		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Alnus sp. 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-030-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR5/1	85	7.5YR4/6	15	C	M	Silt Loam	Water at 8 inches
8-16	10YR5/1	80	7.5YR4/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-030-PFO
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790575° Long: -77.665624° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
PFO followed strong evidence of hydrology and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding, surface water runoff, a perennial high water table, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-030-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	✔	FAC
2. Tsuga canadensis	20	✔	FACU
3. Ulmus americana	5		FACW
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Sambucus nigra	10	✔	FAC
2. Lindera benzoin	5	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	15	✔	FAC
2. Juncus effusus	5		FACW
3. Phalaris arundinacea	5		FACW
4. Carex stricta	5		OBL
5. Sphagnum sp.	5		ND
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-030-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR6/8	10	C	M	Silt Loam	Water at 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-030_PSS/PFO-U
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789805° Long: -77.665461° Datum: WGS-84
Soil Map Unit Name: Purdy silt loam (Pu) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-030_PSS/PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FACU
2. Tsuga canadensis	40	✔	FACU
3. Quercus alba	20	✔	FACU
4. Quercus rubra	20	✔	FACU
5.			
6.			
7.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-030_PSS/PFC

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR2/1	100					Organic matter	
2-4	10YR3/2	100					Silt Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-031-PEM
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790083° Long: -77.663922° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from a seep. Delineation follows a clear drainage pattern down to Boal Gap Run. There are hydric soils, hydric vegetation, and surface water is present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, surface water runoff, and seasonal flooding from Boal Gap Run provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-031-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Juncus effusus	15		FACW
2. Phlaris arundinacea	30	✔	FACW
3. Carex stricta	10		OBL
4. Solidago gigantea	15		FACW
5. Microstegium vimineum	30	✔	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-031-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	10YR5/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-031-PSS
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790119° Long: -77.663936° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is located in a disturbed lawn. Delineation follows willow species and other hydrophytic vegetation and soils. Directly adjacent to the PEM portion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-8

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-031-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix sp.	30	✔	96%
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	30	✔	FAC
2. Impatiens capensis	30	✔	FACW
3. Solidago sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Salix sp. 96% FAC-OBL

SOIL Sampling Point: WL-LTZ-031-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	40	10YR5/6	20	C	M	Silty Clay Loam	
	10YR5/3	40						
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-032-PEM
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790148° Long: -77.664511° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in a bowl-like depression and water collects from the driveway.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-8

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-032-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex sp.	15		75%
2. Phlaris arundinacea	15		FACW
3. Microstegium vimineum	40	✔	FAC
4. Solidago gigantea	30	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

SOIL Sampling Point: WL-LTZ-032-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/1	97.5	10YR4/4	2.5	C	M	Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-033-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786160° Long: -77.713955° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of S-LTZ-045. Delineation follows a lower-lying floodplain area with hydric vegetation and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-<1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, and seasonal flooding from S-LTZ-045 provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-033-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	35	✔	FACW
2. Microstegium vimineum	35	✔	FAC
3. Solidago sp.	10		ND
4. Lysimachia nummularia	10		FACW
5. Allium vineale	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-033-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR4/2	97.5	7.5YR4/4	2.5	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-034-PEM
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790123° Long: -77.663207° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PFO1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation followed a clear distinction from uplands with surface water and mucky conditions and hydric vegetation. The PEM drains to the PSS section.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-12
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-034-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	5		FAC
2. Phalaris arundincea	15	✔	FACW
3. Impatiens capensis	15	✔	FACW
4. Carex stricta	5		OBL
5. Typha latifloia	30	✔	OBL
6. Acorus americanus	15	✔	OBL
7. Rosa palustris	5		OBL
8. Solidago gigantea	5		FACW
9. Lemna minor	5		OBL
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-034-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	95	10YR4/4	5	C	M	Sandy Loam	
6-16	10YR5/1	85	10YR5/6	15	C	M	Silty Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-034-PSS
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790181° Long: -77.663278° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PFO1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from Boal Gap Run and from the PEM portion of the wetland. Delineation follows drainage patterns and lower areas with surface water, hydric soils, and hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding from Boal Gap Run provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-034-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	20	✔	FACW
2. Lindera benzoin	5		FAC
3. Rosa multiflora	20	✔	FACU
4. Sambucus nigra	5		FAC
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	15	✔	FAC
2. Phalaris arundincea	15	✔	FACW
3. Onoclea sensibilis	5		FACW
4. Carex stricta	5		OBL
5. Carex sp.	5		ND
6. Lysimachia nummularia	5		FACW
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-034-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	97.5	10YR4/4	2.5	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-031/032/034-UPL
Investigator(s): LTZ, CML, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789797° Long: -77.665458° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-031/032/034-U

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10		FAC
2. Tsuga canadensis	30	✔	FACU
3. Fagus grandifolia	20	✔	FACU
4. Pinus strobus	15		FACU
5. Prunus serotina	2.5		FACU
6. Betula lenta	2.5		FACU
7.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Poa sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-031/032/034-

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792554° Long: -77.663662° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx), Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located in a low-lying area within a large pasture. It should be noted that a significant portion of the pasture is grazed/mowed. The delineation followed dense hydrophytes, soils with strong redox features, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a seasonal high-water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	50	✔	FACW
2. Juncus effusus	20	✔	FACW
3. Carex lurida	10		OBL
4. Carex stricta	5		OBL
5. Epilobium sp.	5		100%
6. Vernonia noveboracensis	5		FACW
7. Persicaria sagittata	5		OBL
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Epilobium sp. 100% FAC-OBL

Part of the wetland system was located in a grazed/mowed area.

SOIL

Sampling Point: WL-LTZ-035-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR4/6	20	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PEM-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791479° Long: -77.661800° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PEM-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	5	✔	FACU
2. Quercus alba	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2. Lonicera tatarica	10	✔	FACU
3. Berberis thunbergii	5	✔	FACU
4. Elaeagnus umbellata	5	✔	NS
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	65	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS- No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-035-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PSS
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794246° Long: -77.665282° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS/EM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The scrub-shrub wetland connected to wetland WL-LTZ-035-PEM. The delineation followed drainage patterns, dense stands of silky dogwoods, and saturated hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	70	✔	FACW
2. Alnus serrulata	5		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10	✔	FACW
2. Onoclea sensibilis	5	✔	FACW
3. Lysimachia nummularia	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-035-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	97	10YR3/4	3	C	M	Silt Loam	
8-16	10YR3/1	95	10YR3/4	5	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PSS-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794342° Long: -77.664914° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PSS-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	15	✔	FACU
2. Juniperus virginiana	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	75	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5©)			
1. Dipsacus fullonum	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-035-PSS-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PFO
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793153° Long: -77.665625° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS/EM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The forested wetland was located along the fringe of of wetland WL-LTZ-035-PEM. The delineation followed a topographically low-lying area, saturated soils, and red maples.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-11

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a seasonal high-water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	70	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	5	✔	OBL
2. Microstegium vimineum	10	✔	FAC
3. Phalaris arundinacea	5	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-035-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	95	10YR3/6	5	C	M	Silt Loam	
2-11	10YR6/1	70	10YR5/8	30	C	M	Sandy Loam	
11+							Rock	Rock below 11 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 11

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-035-PFO-UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792853° Long: -77.665304° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-035-PFO-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	40	✔	FACU
2. Quercus rubra	5		FACU
3. Juniperus virginiana	40	✔	FACU
4.			
5.			
6.			
7.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	5	✔	FACU
2. Lingustrum vulgare	5	✔	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Poa Sp.	5	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-035-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR3/3	100					Loam	
2-11	10YR4/6	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-036-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795072° Long: -77.665996° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation followed dense hydrophytes, soils with strong redox features, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Perennial seeps, a seasonal high-water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-036-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	30	✔	ND
2. Carex sp.	10		75%
3. Microstegium vimineum	20	✔	FAC
4. Phalaris arundinacea	30	✔	FACW
5. Dichanthelium clandestinum	10		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

*Plants not identified to species level were not included in the Dominance Test.

SOIL

Sampling Point: WL-LTZ-036-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR4/6	20	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-036-PSS
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795217° Long: -77.666074° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation followed dense hydrophytes, soils with strong redox features, and saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Perennial seeps, a seasonal high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-036-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lindera benzoin	10		FAC
2. Cornus amomum	25	✔	FACW
3. Alnus glutinosa	50	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-036-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR4/6	20	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-037-POW
Investigator(s): LTZ, BPH, CML, JAK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795626° Long: -77.665534° Datum: WGS-84
Soil Map Unit Name: Nolin silt loam, local alluvium (No) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation followed a man-made pond with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6-36+
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and a perennial high water table provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-037-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	5	✔	ND
2. Phalaris arundinacea	10	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	40 (A)		80 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Vegetation was only present around fringe.

SOIL

Sampling Point: WL-LTZ-037-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								N/A*

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

*These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-037-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/08/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-036-037 UPL
Investigator(s): LTZ, BPH, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794981° Long: -77.665995° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-036-037 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	5	✔	FACU
2. Pinus strobus	10	✔	FACU
3. Picea abies	10	✔	NS
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 0)			
1. Rosa multiflora	5	✔	FACU
2. Lonicera tatarica	10	✔	FACU
3. Rubus occidentalis	5	✔	NS
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	55	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-036-037 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/3	100					Silt Loam	
6-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-038-PEM
Investigator(s): LTZ, BPH, CML, CEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794418° Long: -77.667735° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS/EM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located within the floodplain of S-LTZ-001-PER. The delineation followed saturated soils with redox feature and dense hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2-8
Water Table Present? Yes ✔ No _____ Depth (inches): 11
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a seasonally high-water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-038-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	10		ND
2. Juncus effusus	20	✔	FACW
3. Carex lurida	20	✔	OBL
4. Carex stricta	5		OBL
5. Ranunculs repens	5		FAC
6. Phalaris arundinacea	20	✔	FACW
7. Typha latifolia	15		FACW
8. Vernonia noveboracensis	2.5		FACW
9. Boehmeria cylindrica	2.5		FACW
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-038-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	97	5YR3/4	3	C	M	Silt Loam	Water at 11 inches
6-16	10YR4/1	80	10YR5/6	20	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-038-PSS
Investigator(s): LTZ, BPH, CML, CEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.790401° Long: -77.669437° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS/EM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Small portion of island within Sinking Creek

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding from Sinking Creek provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-038-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Cornus amomum	25	✔	FACW
2. Alnus incana	25	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FACW
2. Impatiens capensis	25	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-038-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silty Clay Loam	
4-16	10YR4/1	80	10YR3/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-038-PFO
Investigator(s): LTZ, BPH, CML, CEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7904138° Long: -77.667169° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PSS/EM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Large forested floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding from Sinking Creek, perennial seeps, a surface water runoff, and a seasonal high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-038-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	35	✔	FAC
2. Tsuga canadensis	30	✔	FACU
3.			
4.			
5.			
6.			
7.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Berberis thunbergii	5		FACU
3. Cornus amomum	15	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-038-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-038-PEM-UPL
Investigator(s): LTZ, BPH, CML, CEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794361° Long: -77.668045° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-038-PEM-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	5	✔	FACU
2. Acer rubrum	5	✔	FAC
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Berberis thunbergii	35	✔	FACU
3. Elaeagnus umbellata	35	✔	UPL
4.			
5.			
6.			
7.			
8.			
9.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-038-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-039-PEM
Investigator(s): LTZ, BPH, CML, JK, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796797° Long: -77.666641° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland follows the base of a slope and connects to a floodplain bench along S-LTZ-001-PER. The wetland is routinely mowed, limiting the growth of hydrophytic vegetation. The delineation followed saturation and hydric soils, which contrasts with upland conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, seasonal seeps, a seasonally high-water table, and surface water run-off provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-039-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	90	✔	ND
2. Carex lurida	10		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

✔ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

The vegetation in the wetland is highly disturbed due to consistent mowing.

SOIL

Sampling Point: WL-LTZ-039-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	7.5YR3/4	10	C	M	Silt Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-039-UPL
Investigator(s): LTZ, BPH, CML, JK, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796797° Long: -77.666641° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-039-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	75	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

The vegetation in the wetland is highly disturbed due to consistent mowing.

SOIL

Sampling Point: WL-LTZ-039-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/3	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-040-PEM
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796614° Long: -77.667928° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The wetland is located in the floodplain of LTZ-001 in a highly disturbed and mowed pasture, limiting the growth of hydrophytes. Land topography goes directly to the west which borders the pasture area in the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-040-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	50	✔	ND
2. Carex lurida	40	✔	OBL
3. Carex stricta	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

✔ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to the species level were not included in the Dominance Test

The vegetation in the wetland is highly disturbed due to consistent mowing.

SOIL Sampling Point: WL-LTZ-040-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silt Loam	
4-16	10YR3/2	80	10YR3/6	20	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-040-PEM-UPL
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796700° Long: -77.669183° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-040-PEM-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	60	✔	ND
2. Daucus carota	20	✔	UPL
3. Plantago lanceolata	20	✔	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to the species level were not included in the Dominance Test

The vegetation in the wetland is highly disturbed due to consistent mowing.

SOIL Sampling Point: WL-LTZ-040-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks: Grass is routinely mowed.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-041-PEM
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792495° Long: -77.664972° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland is a small floodplain bench. The delineation follows topographically low-lying geomorphic position where water over tops the banks of 017-PER and contains redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-041-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	80	✔	FAC
2. Persicaria sagittata	20	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-041-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR3/2	100					Silt Loam	
4-16	7.5YR4/1	85	7.5YR4/6	15	C	M	Silt Loam	With Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-041-PEM-UPL
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792474° Long: -77.664864° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-041-PEM-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	60	✔	UPL
2. Fagus grandifola	30	✔	UPL
3.			
4.			
5.			
6.			
7.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Allaria petiolata	10	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-041-PEM-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/4	100					Silt Loam	With Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-042-PEM
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791592° Long: -77.664193° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The wetland is a floodplain bench. The delineation follows topographically low-lying areas where S-LTZ-017 seasonally over tops its banks and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-042-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vimieum	85	✔	FAC
2. Imaptiens capensis	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-042-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	90	10YR3/6	10	C	M	Silt Loam	With Gravel
6-16	10YR3/2	95	10YR3/6	5	C	M	Silt Loam	With Gravel
			7.5YR3/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-042-PFO
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791779° Long: -77.664235° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PFO1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
The wetland is a floodplain bench. The delineation follows topographically low-lying areas where S-LTZ-017 seasonally over tops its banks and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): -
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-042-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	60	✔	FACU
2. Acer saccharum	10		FACU
3. Betula lenta	30	✔	FACU
4.			
5.			
6.			
7.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-042-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	95	10YR3/4	5	C	M	Silt Loam	With Gravel
3-16	10YR4/2	90	7.5YR3/4	5	C	M	Silt Loam	With Gravel
			7.5YR4/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-042-UPL
Investigator(s): LTZ, BPH, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791676° Long: -77.664381° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-042-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	60	✔	UPL
2. Fagus grandifola	30	✔	UPL
3.			
4.			
5.			
6.			
7.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Allaria petiolata	10	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-042-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR3/4	100					Silt Loam	With Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-043-PEM
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796456° Long: -77.679597° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located directly in the floodway and floodplain of the LTZ-023. A seasonally high water table and flooding provide the hydrology. Delineation follows hydric soils, vegetation and has a geomorphic topographic gradient along the channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a seasonally high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-043-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	5		ND
2. Sphagnum sp.	5		ND
3. Packera aurea	15		FACW
4. Impatiens capensis	25	✔	FACW
5. Typha latifolia	25	✔	OBL
6. Phalaris arundinacea	25	✔	FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-043-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	10YR4/6	10	C	M	Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-043-PSS
Investigator(s): LTZ, SNW, CML, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796639° Long: -77.678763° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No ____**
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Wetland is located directly in the floodway and floodplain of the LTZ-023. A seasonal high water table and flooding provide the hydrology. Delineation follows hydric soils, vegetation and has a geomorphic topographic gradient along the channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No ____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No ____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a seasonally high water table, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-043-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 5©)			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Poa sp.	50	✔	ND
2. Sphagnum sp.	20	✔	ND
3. Packera aurea	20	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-043-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	10YR4/6	10	C	M	Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/16/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-043-PFO
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796511° Long: -77.679203° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located directly in the floodway and floodplain of the LTZ-023. A seasonally high water table and flooding provide the hydrology. Delineation follows hydric soils and vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a seasonally high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-043-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	✔	FAC
2. Salix nigra	45	✔	OBL
3. Alnus sp.	20	✔	75%
4.			
5.			
6.			
7.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	5	✔	ND
2. Sphagnum sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Alnus sp. - 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-043-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	10YR4/6	10	C	M	Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/16/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-043-POW
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795796° Long: -77.681221° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a pond with deep surface water and drainage patterns.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 4-36+
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding, a seasonally high water table, seasonal/perennial and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-043-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	2.5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2.5 = Total Cover		
50% of total cover: 1.25	20% of total cover: 0.5		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	5	✔	OBL
2. Phalaris arundinacea	2.5	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	7.5 = Total Cover		
50% of total cover: 3.75	20% of total cover: 1.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation only around fringe.

SOIL

Sampling Point: WL-LTZ-043-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-043-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/22/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-044-POW
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797663° Long: -77.684808° Datum: WGS-84
Soil Map Unit Name: Hagerstown silt loam (HaC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Man made pond with surface water and drainage patterns.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 4-12+
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-044-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: - (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-044-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks: No soils, there is a liner on the bottom and in the underdrain.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-043-044-UPL
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796605° Long: -77.682896° Datum: WGS-84
Soil Map Unit Name: Weikert channery silt loam (WeD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-043-044-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	15	✔	UPL
2. Tsuga canadensis	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	15	✔	FACU
2. Elaeagnus umbellata	2.5		ND
3. Ligustrum vulgare	2.5		FACU
4. Rosa multiflora	15	✔	FACU
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Dipsacus fullonum	5		FACU
2. Daucus carota	2.5		UPL
3. Solidago sp.	15	✔	ND
4. Poa sp.	10	✔	ND
5. Andropogon virginicus	2.5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-043-044-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/22/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-048-PSS
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786782° Long: -77.691425° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Disturbed soils due to excavation activities in the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-4

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-048-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	60	✔	FACW
2. Salix nigra	10		OBL
3. Rosa multiflora	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5')			
1. Carex stricta	10	✔	OBL
2. Scirpus cyperinus	10	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-048-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	90	5YR3/4	10	C	M	Silt loam	
4+							Compacted Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: 4

Depth (inches): Compacted Gravel

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/22/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-048-UPL
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786882° Long: -77.691511° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-048-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus avium	5	✔	UPL
2. Quercus rubra	15	✔	UPL
3. Prunus serotina	5	✔	UPL
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	70	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Herb Stratum (Plot size: 5')			
1. Allium vineale	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-048-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR3/3	100					Loam	
6+							Compacted Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: 6

Depth (inches): Compacted Gravel

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/22/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-049-PEM
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791170° Long: -77.687519° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The delineation follows obvious stands of cattails and red canary. Surface water is present throughout the entire wetland. The wetland drains through the culvert into the channel on the other side of the driveway.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water run-off and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-049-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifola	25	✔	OBL
2. Poa sp.	5		ND
3. Phalaris arundinacea	40	✔	FACW
4. Impatiens capensis	5		FACW
5. Microstegium winimeum	25	✔	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-049-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/6	10	C	M	Silty Clay Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-049-POW
Investigator(s): LTZ Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.789655° Long: -77.690001° Datum: WGS-84
Soil Map Unit Name: Berks and Weikert soils (BMF), Edom silt loam (EdC) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a spring-fed pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 36+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-049-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-049-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-049-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 02/22/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-050-PEM
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791852° Long: -77.685913° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The delineation follows obvious stands of cattails and reed canarygrass. Surface water is present throughout the entire wetland. The wetland drains through the culvert into the channel on the other side of the driveway.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-6
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water run-off and seasonal or perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-050-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifola	20	✔	OBL
2. Solidago sp.	2.5		ND
3. Phalaris arundinacea	40	✔	FACW
4. Impatiens capensis	10		FACW
5. Microstegium vinimeum	20	✔	FAC
6. Carex sp.	5		75%
7. Sphagnum sp.	2.5		ND
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-050-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	10YR4/4	5	C	M	Silty Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-050-PSS
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792223° Long: -77.685264° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation follows obvious stands of silky dogwood and hydric soils along the channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-6
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water run-off and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-050-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	45	✔	FACW
2. Salix nigra	15	✔	OBL
3. Acer negundo	15	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5')			
1. Sphagnum sp.	5	✔	ND
2. Impatiens capensis	10	✔	FACW
3. Carex stricta	5	✔	OBL
4. Microstegium vimineum	5	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-050-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/3	100					Silty Clay Loam	
4-16	10YR4/2	90	10YR4/4	10	C	M	Silty Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 3/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-051-PEM
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.791479° Long: -77.685794° Datum: WGS-84
Soil Map Unit Name: Weikert shaly silt loam (WeC), Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland originates from a spring house. The delineation follows obvious hydric vegetation, surface water and drainage patterns. The wetland feeds S-LTZ-023.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-051-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	2.5	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2.5 = Total Cover		
50% of total cover: 1.25	20% of total cover: 0.5		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	15		OBL
2. Phalaris arundinacea	30	✔	FACW
3. Solidago sp.	10		ND
4. Microstegium vinimeum	10		FAC
5. Sphagnum sp.	5		ND
6. Impatiens capensis	5		FACW
7. Carex stricta	20	✔	OBL
8. Verbena hastata	2.5		FACW
9.			
10.			
11.			
	97.5 = Total Cover		
50% of total cover: 48.75	20% of total cover: 19.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-051-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	5YR4/4	10	C	M	Silty Clay Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-052-PEM
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.787749° Long: -77.695491° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB), Clarksburg silt loam (CkB), Edom silt loam (EdB), Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The core of the wetland follows obvious drainage patterns and surface water. The fringe of the delineation follows obvious redox features and hydrophytic vegetation regardless of horse grazing. Strong mottles in the soils and oxidized rhizospheres are the basis of delineation. The wetland is fed by S-LTZ-025 and has surface water throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-6
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water run-off, seasonal flooding and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-052-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Verbena hastata	5		FACW
2. Phalaris arundinacea	35	✔	FACW
3. Juncus effusus	10		OBL
4. Sphagnum sp.	2.5		ND
5. Solidago sp.	5		ND
6. Ranunculus repens	2.5		OBL
7. Impatiens capensis	10		FACW
8. Persicaria sagittata	5		OBL
9. Carex lurida	20	✔	OBL
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-052-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR5/1	70	5YR4/6	30	C	M	Silty Clay Loam	Water at 6 inches
12-16	2.5YR6/2	70	2.5YR6/8	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-052-PSS
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784398° Long: -77.696022° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and a perennial high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-052-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	85	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Herb Stratum (Plot size: 5')			
1. Solidago sp.	5	✔	ND
2. Sphagnum sp.	5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	90 (A)		190 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-052-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR6/4	95	10YR6/6	5	C	M	Silty Clay Loam	Water at 4 inches
6-16	2.5YR4/3	70	10YR6/8	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ✔ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-052-UPL
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784426° Long: -77.696181° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-052-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	10	✔	UPL
2. Rosa multifora	10	✔	UPL
3. Rubus Sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Poa sp.	30	✔	ND
2. Daucus Carota	20	✔	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 5©)			
1. Celastrus orbiculatus	10	✔	UPL
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-052-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silty Clay Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-053-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785428° Long: -77.705464° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fed by hillslope seeps and possesses surface water and a well defined drainage pattern. The delineation follows a low-lying drainage with hydric soils and hydrophytic vegetation that differs from upland areas. Aerials indicate that there is an upslope pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-12
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-053-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	20	✔	FACW
2. Onoclea sensibilis	15		FACW
3. Euthamia graminifolia	5		FAC
4. Epilobium sp.	2.5		100%
5. Carex lurida	20	✔	OBL
6. Juncus effusus	5		FACW
7. Poa sp.	2.5		ND
8. Sphagnum sp.	5		ND
9. Cardamine pensylvanica	5		OBL
10. Verbena hastata	20	✔	FACW
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Epilobium sp. - 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-053-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Organic material	
4-8	10YR5/1	95	10YR6/8	5	C	M	Clay Loam	
8-16	10YR5/1	50	10YR6/8	50	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-053-PSS
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784767° Long: -77.704970° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-053-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Solidago sp.	60	✔	ND
2. Sphagnum sp.	20	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-053-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR6/4	95	10YR6/6	5	C	M	Silty Clay Loam	Water at 4 inches
6-16	2.5YR4/3	70	10YR6/8	30	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-053-POW
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784486° Long: -77.704675° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The wetland is a pond fed by seeps.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-12+
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-053-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-053-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-053-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/05/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-053-UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784613° Long: -77.705287° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-053-UPL

Tree Stratum (Plot size: 10©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Quercus alba	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	50	✔	ND
2. Dipsacus fullonum	10		FACU
3. Solidago sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-053-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/3	100					Silt Loam	
12+							Fill	Fill below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-054-PEM
Investigator(s): LTZ, CML, AHE, SNW, ASH, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793081° Long: -77.684288° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Delineation follows dense stands of cattails and other hydric vegetation around the fringe. The wetland receives its hydrology from the POW section above grade and S-023-LTZ, flowing from the west. Hydric soils and surface water make the wetland differ from the upland areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-12
Water Table Present? Yes ✔ No _____ Depth (inches): 8
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, a perennial high water table, and seasonal/perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-054-PEM1

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	25	✔	OBL
2. Spagnum sp.	2.5		ND
3. Carex sp.	10		75%
4. Carex lurida	5		OBL
5. Eplilobium sp.	2.5		100%
6. Microstegium vinimeum	10		FAC
7. Persicaria sagittata	5		OBL
8. Phalaris arundinacea	20	✔	FACW
9. Euthamia graminifolia	5		FAC
10. Juncus effusus	15		FACW
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp 75% FAC-OBL
Epilobium sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-054-PEM1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silt Loam	Water at 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-054-PSS
Investigator(s): LTZ, CML, AHE, SNW, ASH, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793909° Long: -77.682913° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows a stand of sillky dogwood connected to the PEM system. The wetland receives its hydrology from the POW section above grade and S-023-LTZ, flowing from the west. Hydric soils and surface water make the wetland differ from the upland areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal/perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-054-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	55	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5©)			
1. Euthamia graminifolia	15	✔	FAC
2. Spagnum sp.	5		ND
3. Poa sp.	5		ND
4. Microstegium vinimeum	5		FAC
5. Impatiens capensis	15	✔	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-054-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR3/2	97.5	7.5YR5/6	2.5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-054-POW
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.792303° Long: -77.683561° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Pond receives hydrology from a PEM section above.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 6-12
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-054-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20	✔	OBL
2. Juncus effusus	20	✔	FACW
3. Poa sp.	30	✔	ND
4. Solidago sp.	10		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

10-20% vegetation in POW.

SOIL

Sampling Point: WL-LTZ-054-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-054-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: LTZ-049,050,051,054-UPI
Investigator(s): LTZ, CML, AHE, SNW, ASH, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793255° Long: -77.683342° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-049, 050, 051,

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2. Tsuga canadensis	5		FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Poa sp.	50	✔	ND*
2. Trifolium repens	5		FACU
3. Plantago sp.	5		ND*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-049, 050, 051, 054-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-055-PEM
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793389° Long: -77.680472° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The seasonal seep is an area with surface water and some drainage patterns to a roadside ditch. Soils are disturbed with fill and limited to no hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-055-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	40	✔	ND
2. Juncus effusus	5		FACW
3. Dipsacus fullonum	5		FACU
4. Phalaris arundinacea	20	✔	FACW
5. Solidago sp.	5		ND
6. Sphagnum sp.	5		ND
7. Microstegium vinimeum	20	✔	FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-055-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR3/3	95	5YR5/8	5	C	M	Silty Clay Loam	Water at 10 inches
12-16	Gley13N	97.5	5YR5/8	2.5	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-055-UPL
Investigator(s): LTZ, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.793177° Long: -77.680978° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-055-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	10	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Poa sp.	55	✔	ND
2. Trifolium repens	10		FACU
3. Plantago lanceolata	5		FACU
4. Dipsacus fullonum	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-055-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-056-PEM
Investigator(s): LTZ, AHE, CML, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope bottom Local relief (concave, convex, none): Concave Slope (%): 5-10
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786111° Long: -77.690500° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in a floodway. Delineation followed surface water and hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-4
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A seasonal high water table, seasonal seeps, surface water runoff, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-056-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Lonicera tatarica	15	✔	FACU
2. Rosa multiflora	2.5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	17.5 = Total Cover		
50% of total cover: 8.75	20% of total cover: 3.5		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	✔	FACW
2. Onoclea sensibilis	20	✔	FACW
3. Juncus effusus	5		FACW
4. Carex lurida	10		OBL
5. Spagnum sp.	2.5		ND
6. Euthamia graminifolia	5		FAC
7.			
8.			
9.			
10.			
11.			
	82.5 = Total Cover		
50% of total cover: 41.25	20% of total cover: 16.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-056-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	Gley1 5/5GY	80	7.5YR3/4	20	C	M	Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-057-PEM
Investigator(s): LTZ, CML, AHE, SNW, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786021° Long: -77.689334° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The seasonal seep is an area with surface water and some drainage patterns to a roadside ditch. Soils are disturbed with fill and limited to no hydrophytes. The ditch is receiving overland sheet flow. Water lays on the ditch long enough to develop hydric soils and limited hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-057-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	70	✔	FACW
2. Ranunculus repens	30	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-057-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	95	5YR3/4	5	C	M	Silty Clay Loam	
12+							Fill	Fill below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: 12

Depth (inches): Fill

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-056-057 UPL
Investigator(s): LTZ, CML, AHE, SNW, ASH, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786377° Long: -77.688918° Datum: WGS-84
Soil Map Unit Name: Berks and Weikert soils (BMF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-056-057 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	70	✔	ND*
2. Daucus carota	15		FACU
3. Solidago sp.	15		ND*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	15 (A)		80 (B)

Prevalence Index = B/A = 5.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-056-057 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-058-PEM
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781201° Long: -77.754204° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm), Nolin silt loam (No) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodway and floodplain of Spring Creek. The delineation follows hydric soils and dense hydrophytes in a low-lying area at the bottom of a slope and along the creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-3
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-058-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	15		OBL
2. Phalaris arundinancea	30	✔	FACW
3. Juncus effusus	15		OBL
4. Carex sp.	5		75%
5. Poa sp.	30	✔	ND
6. Epilobium sp.	5		100%
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL
Epilobium sp. 100% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-058-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Water at 4 inches
6-16	10YR4/1	85	10YR4/4	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-059-PEM
Investigator(s): LTZ, CML, SNW,CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780832° Long: -77.756876° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of Spring Creek. Delineation follows hydric soils and dense hydrophytes in a low-lying area at the bottom of a slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-059-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	10		OBL
2. Phalaris arundinancea	25	✔	FACW
3. Carex lurida	20	✔	OBL
4. Epilobium sp.	5		100%
5. Juncus effusus	20	✔	FACW
6. Dipsacus fullonum	5		FACU
7. Scirpus cyperinus	5		OBL
8. Sphagnum sp.	10		ND
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Epilobium sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-059-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	90	5YR5/6	10	C	M	Silt Loam	Water at 4 inches
12+							Fill	Fill below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-059-PSS
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780759° Long: -77.756430° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodway and floodplain of Spring Creek. The delineation follows hydric soils and dense hydrophytes in a low-lying area at the bottom of a slope and along the creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-059-PSS

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	20	✔	FACW
2. Alnus sp.	5		75%
3. Betula nigra	5		FACW
4. Acer rubrum	10	✔	FAC
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Carnus amomum	10	✔	FACW
2. Cornus sericea	10	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	20	✔	FACW
2. Juncus effusus	10	✔	OBL
3. Dipsacus fullonum	5		FACU
4. Epilobum sp.	5		100%
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Alnus sp. 75% FAC-OBL
Epilobum sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-059-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	90	5YR5/6	10	C	M	Silt Loam	Water at 4 inches
12+							Fill	Fill below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-060-POW
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780914° Long: -77.758753° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made rock lined pond with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-6
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-060-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	35	✔	OBL
2. Phalaris arundinacea	30	✔	FACW
3. Solidago sp.	15		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Vegetation around fringe - 10%

SOIL

Sampling Point: WL-LTZ-060-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Soils around fringe.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-061-PEM
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781076° Long: -77.755351° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-061-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	45	✔	FACW
2. Carex lurida	25	✔	OBL
3. Poa sp.	15		ND
4. Epilobium coloratum	10		FACW
5. Symphyotrichum novi-belgii	5		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-061-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/2	100					Clay Loam	
10-16	10YR3/2	60	5YR5/6	40	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-061-POW
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780910° Long: -77.757664° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Ponded area with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-6
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-061-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	40	✔	OBL
2. Phalaris arundinacea	30	✔	FACW
3. Solidago sp.	20	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Vegetation around fringe - 10%

SOIL

Sampling Point: WL-LTZ-061-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Soils around fringe

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: State College / Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-062-PEM
Investigator(s): LTZ, CML, AHE, SNW, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): 147 Lat: 40.781194° Long: -77.757778° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-062-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	45	✔	FACW
2. Typha latifolia	25	✔	OBL
3. Juncus effusus	10		FACW
4. Epilobium coloratum	10		FACW
5. Carex lurida	10		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-062-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	80	7.5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-062-PSS
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781094° Long: -77.757280° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland lines Spring Creek and the adjacent POW Wetland. Delineation follows stands of silky dogwood and hydric soils in the floodway of spring creek. The area differs from the mowed other golf course areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-062-PSS

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	5	✔	FACW
2. Alnus sp.	5	✔	75%
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	30	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Epilobium sp.	10		100%
2. Phalaris arundinacea	20	✔	FACW
3. Poa sp.	20	✔	ND*
4. Solidago sp.	10		ND*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Epilobium sp. 100% FAC-OBL
Alnus sp. 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-062-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	95	7.5YR4/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-063-POW
Investigator(s): LTZ, CML, AHE, SNW, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781083° Long: -77.759889° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a man-made pond with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 36
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Man-made pond, completely inundated.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-063-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	10	✔	FACW
2. Typha latifolia	10	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

All vegetation found on fringe of pond.

SOIL Sampling Point: WL-LTZ-063-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-063-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-064-PEM
Investigator(s): LTZ, CML, AHE, SNW, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): 147 Lat: 40.780695° Long: -77.760328° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-064-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Cornus sericea	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Carex lurida	20	✔	OBL
3. Poa sp.	5		ND
4. Solidago sp.	5		ND
5. Dipsacus fullonum	5		FACU
6. Juncus effusus	10		FACW
7. Vernonia noveboracensis	5		FACW
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-064-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	7.5YR3/4	5	C	M	Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-065-PEM
Investigator(s): LTZ, CML, AHE, SNW, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): 147 Lat: 40.779860° Long: -77.761060° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____
Water Table Present? Yes ✔ No _____ Depth (inches): 10
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 4

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A seasonal high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-065-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✔	FACW
2. Impatiens capensis	20	✔	FACW
3. Carex lurida	15		OBL
4. Solidago sp.	15		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-065-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	100					Silt Clay Loam	Water at 10 inches
10-16	10YR3/1	95	7.5YR3/4	5	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 2-0 State: PA Sampling Point: WL-LTZ-065-PSS
Investigator(s): LTZ, CML Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780414° Long: -77.761138° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____
Water Table Present? Yes ✔ No ____ Depth (inches): 10
Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 4

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A seasonal high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-065-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Cornus amomum	35	✔	FACW
2. Salix nigra	15	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FACW
2. Symphyotrichum novi-belgii	15	✔	FACW
3. Solidago sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-065-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	100					Silt Clay Loam	Water at 10 inches
10-16	10YR3/1	95	7.5YR3/4	5	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-066-POW
Investigator(s): LTZ, CML, BPH, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780861° Long: -77.762222° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

The delineation followed hydrophytes (reed canarygrass) and soils with redox features are the fringe of the pond as well as the obvious surface water line.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 2-5
Water Table Present? Yes ____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and a perennial high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-066-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	60	✔	ND
2. Phalaris arundinacea	40	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	40 (A)		80 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Vegetation was only present around fringe.

SOIL

Sampling Point: WL-LTZ-066-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/2	90	10YR3/6	10	C	M	Clay Loam	
14-16	10YR4/1	70	10YR4/6	30	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Soils are from the fringe area.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-067-PEM
Investigator(s): LTZ, CML, BPH, CEH, JMM Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780462° Long: -77.751457° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A/PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in the floodway and floodplain of Spring Creek. Seasonal flooding and surface water runoff from the surrounding slopes provides hydrology. The delineation follows obvious surface water, drainage patterns, and a reed canary monoculture at the bottom of a slope. Wetland includes an area in a grazed pasture that is a drainage pattern with hydric soils coming from a culture under Route 322.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 4
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding and a seasonally high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-067-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Solanum dulcamara	2.5		FAC
2. Phalaris arundinacea	40	✔	FACW
3. Epilobium sp.	5		100%
4. Sphagnum sp.	2.5		ND
5. Eleocharis palustris	5		OBL
6. Typha latifolia	15		OBL
7. Agrostis gigantea	15		FACW
8. Juncus tenuis	15		FAC
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Epilobium sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-067-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR4/2	90	10YR5/6	10	C	M	Silt Clay Loam	
8-16	7.5YR5/2	60	7.5YR5/6	40	C	M	Silt Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/09/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-067-PSS
Investigator(s): LTZ, CML, BPH, CEH, JMM Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780617° Long: -77.750026° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodway and floodplain of Spring Creek. Seasonal flooding and surface water runoff from the surrounding slopes provides hydrology. The delineation follows obvious surface water, drainage patterns, a stands of hydrophytic scrub/shrub vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 4
Water Table Present? Yes ✔ No _____ Depth (inches): 12
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding and a seasonally high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-067-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	30	✔	FACW
2. Alnus sp.	25	✔	75%
3. Elaeagnus umbellata	10		NS
4. Vaccinium corymbosum	15		FACW
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5')			
1. Solanum dulcamara	5		FAC
2. Phalaris arundinacea	15	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

Alnus sp. 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-067-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR4/2	90	10YR5/6	10	C	M	Silt Clay Loam	
8-16	7.5YR5/2	60	7.5YR5/6	40	C	M	Silt Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-058-67-UPL
Investigator(s): LTZ, CML, SNW, CEH, JMM, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780430° Long: -77.754506° Datum: WGS-84
Soil Map Unit Name: Nolin silt loam (No) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-058-67-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	15	✔	FACU
2. Picea abies	15	✔	UPL
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	70	✔	ND*
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-058-67-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-068-PEM
Investigator(s): LTZ, CML, AHE, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786179° Long: -77.688880° Datum: WGS-84
Soil Map Unit Name: Berks and Weikert soils (BMF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is positioned in the floodplain of the S-LTZ-51 and has surface water and hydric soils. There are perennial seeps that give hydrology to the wetland as well. The delineation follows stands of reed canarygrass and surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, perennial seeps and a perennial high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-068-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✔	FACW
2. Impatiens capensis	20	✔	FACW
3. Persicaria sagittata	15	✔	OBL
4. Sphagnum sp.	15		ND*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-068-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR4/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-068-UPL
Investigator(s): LTZ, CML, AHE, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786377° Long: -77.688918° Datum: WGS-84
Soil Map Unit Name: Berks and Weikert soils (BMF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-068-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	70	✔	ND*
2. Daucus carota	15		FACU
3. Solidago sp.	15		ND*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	15 (A)		80 (B)

Prevalence Index = B/A = 5.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-068-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-069-PEM
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786366° Long: -77.686073° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC), Berks and Weikert soils (BMF), Ernest channery silt loam (ErC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is positioned in the floodplain of the S-LTZ-51 and has surface water and hydric soils. There are perennial seeps that give hydrology to the wetland as well. The delineation follows stands of reed canary grass and surface water while being at the base of the slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes _____ No ✔ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding and a perennial high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-069-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	30	✔	FACW
2. Microstegium vinimeum	20	✔	FAC
3. Juncus effusus	20	✔	FACW
4. Carex lurida	15		OBL
5. Carex sp.	2.5		75%
6. Euthamia graminifolia	2.5		FAC
7. Scirpus cyperinus	2.5		OBL
8. Sphagnum sp.	2.5		ND
9. Impatiens capensis	2.5		FACW
10. Onoclea sensibilis	2.5		FACW
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-069-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	85	10YR4/6	15	C	M	Silt Loam	
6-16	10YR3/1	80	10YR3/1	20	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-162-PEM
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786159° Long: -77.685279° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a perennial high water table, surface water runoff, and seasonal flooding from S-LTZ-031-PER provide the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-162-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	✔	FACW
2. Carex lurida	15		OBL
3. Onoclea sensibilis	15		FACW
4. Impatiens capensis	5		FACW
5. Typha latifolia	25	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-162-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	GLEY1 5/10Y	80	7.5YR4/6	20	C	M	Clay Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-162-PSS
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786213° Long: -77.685080° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, surface water runoff, a perennial high water table, and seasonal flooding from S-LTZ-031-PER provide the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-162-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Carex lurida	5		OBL
3. Impatiens capensis	15	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-162-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	80	10YR3/1	10	D	M	Silty Clay Loam	Water at 2 inches
			2.5YR5/2	10	D	M		
6-16	10YR3/2	75	2.5YR5/2	15	D	M	Silty Clay Loam	
			7.5YR4/6	10	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-069, 162-UPL
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786752° Long: -77.686869° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-069,162 -UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Poa sp.	60	✔	ND
2. Trifolium repens	10		UPL
3. Plantago sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-069, 162-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-070-PEM
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786701° Long: -77.685005° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from a seep and surface water runoff and is at the fringe of the POW section. There is hydric soils with strong mottles and hydric vegetation around the fringe that differs from upland areas in higher elevation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-070-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	30	✔	FACW
2. Poa sp.	30	✔	ND
3. Rumex obtusifolius	20	✔	FAC
4. Carex lurida	20	✔	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-070-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2							Organic matter	
2-16	10YR5/1	75	10YR6/8	25	C	M	Silt Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-070-POW
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786574° Long: -77.684887° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC), Ernest channery silt loam (ErC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
This wetland is in a ponded area in a bowl that has surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-12
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-070-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	100	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation around pond fringe.

SOIL

Sampling Point: WL-LTZ-070-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-070-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-071-PEM
Investigator(s): LTZ, CML, AHE, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786492° Long: -77.684737° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Wetland receives hydrology from a seep in the adjacent yard and the delineation follows a low-lying ditch with hydric soils and hydric vegetation. The wetland slopes to the channel below and receives partial groundwater seep from WL-LTZ-070-POW above.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-071-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Carex sp.	20	✔	75%
3. Persicaria sagitatta	10		OBL
4. Microstegium vimineum	20	✔	FAC
5. Epilobium sp.	10		100%
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	10	✔	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

Epilobium sp. - 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-071-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Silt Loam	
4-16	10YR4/1	50	10YR5/8	50	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/21/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-070, 071-UPL
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786453° Long: -77.684651° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-070, 071-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	30	✔	FACU
2. Pinus strobus	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	2.5	✔	FACU
2. Rubus sp.	2.5	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Poa sp.	40	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-070, 071-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-073-PEM
Investigator(s): LTZ, CML, AEH, JMM, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782270° Long: -77.740090° Datum: WGS-84
Soil Map Unit Name: Buchanan channery silt loam (BuB), Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PEM is at the start of where the slope has a water table and runs downhill in the main part towards the PFO. Dominant vegetation was a reed canarygrass monoculture. The delineation followed the reed canary grass and hydric soils around the whole wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-3
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The headwaters of a seasonal seep at the slope provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-073-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	✔	FACW
2. Sphagnum sp.	20	✔	ND
3. Juncus effusus	10		OBL
4. Juncus tenuis	5		FAC
5. Apocynum cannabinum	5		FAC
6. Carex vulpinoidea	20	✔	OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-073-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/1	80	5YR3/4	20	C	M	Silt Clay Loam	
10-16	2.5YR5/2	60	10YR2/1	20	C	M	Silt Clay Loam	
			10YR5/6	20	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-073-PSS
Investigator(s): LTZ, CML, AEH, JMM, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782307° Long: -77.739375° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-073-PSS

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus sp.	10	✔	75%
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	60	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FAC
2. Sphagnum sp.	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Alnus sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-073-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	90	7.5YR3/4	10	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-073-PFO
Investigator(s): LTZ, CML, AEH, JMM, CEH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783303° Long: -77.740083° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is at the bottom of the topography of PEM and PSS sections. The delineation follows surface water and during trees. There are hydric soils and vegetation that the delineation follows. The wetland is open ended to the north as surface water continues.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-6
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-073-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fraxinus pennsylvanica	20	✔	FACW
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	60	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-073-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2						Loam	
3-16	10YR5/2	90	10YR5/6	10	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-073-POW
Investigator(s): LTZ, CML, AEH, JMM, SS, BPH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7817849° Long: -77.741343° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a man-made pond with surface water and drainage patterns.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 2-12+
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-073-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Sagittaria latifolia	5	✔	OBL
2. Solidago sp.	5	✔	ND
3. Juncus tenuis	5	✔	FAC
4. Agrostis gigantea	5	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Vegetation along fringe.

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-073-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-073-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-073-UPL
Investigator(s): LTZ, CML, AEH, JMM, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782363° Long: -77.738698° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-073-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinophyta sp.	70	✔	ND*
2.			
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	10	✔	FACU
2. Ligustrum vulgare	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Poa sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Uplands are predominately farmed Christmas tree lots.

SOIL

Sampling Point: WL-LTZ-073-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/28/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-074-PEM
Investigator(s): LTZ, CML, AEH, JMM, CEH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778735° Long: -77.735638° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland shows signs of groundwater discharge and is a depression in the hillslope. The delineation follows a lower area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-4

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-074-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium viminuem	95	✔	FAC
2. Epilobium sp.	5		100%
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Epilobium sp. - 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-074-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	100					Silt Loam	
2-4	10YR4/1	100					Silt Loam	
4+							Rock	Rock present below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-075-POW
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776039° Long: -77.738538° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Pond with surface water is an obvious lower bowl than the surrounding uplands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2-36
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-075-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vinimeum	5	✔	FAC
2. Typha latifolia	5	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation around fringe.

SOIL

Sampling Point: WL-LTZ-075-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	10YR4/4	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

On fringe

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-076-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776201° Long: -77.739163° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland receives hydrology from the pond upslope of it. Water seeps through the hillside and drains through the wetland. The delineation follows apparent hydrology and hydric vegetation that differs from surrounding upland areas. It should be noted that while soils are hydric, they have been disturbed from logging operations in the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-076-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Epilobium sp.	20	✔	100%
2. Phalaris arundinacea	20	✔	FACW
3. Microstegium vinimeum	20	✔	FAC
4. Sphagnum sp.	15		ND
5. Carex sp.	10		75%
6. Carex lurida	10		OBL
7. Solidago sp.	5		ND
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL
Epilobium sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-076-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR5/2	80	10YR5/8	20	C	M	Clay Loam	
12+							Fill	Fill below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-074-076 UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776307° Long: -77.738948° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-074-076 UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	5	✔	FACU
2. Tsuga canadensis	5	✔	FACU
3. Quercus velutina	10	✔	UPL
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 0)			
1. Rosa multiflora	10	✔	FACU
2. Lonicera tatarica	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Poa sp.	40	✔	ND
2. Microstegium vinimeum	10		FAC
3. Solidago sp.	10		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-074-076 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-077-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781853° Long: -77.707914° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LcD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fueled by mountainside seeps. The areas is a sparsely vegetated concave surface with little vegetative community. Some hydric vegetation is present but the delineation mainly follows areas of mucky hydric soils and water-stained leaves with the floodplain and floodway of S-LTZ-040.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-077-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	25	✔	FACW
2. Microstegium vinimeum	30	✔	FAC
3. Sphagnum sp.	25	✔	ND
4. Osmunda cinnamomea	20	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-077-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/1	100					Loam	
4-12	10YR3/2	95	10YR4/4	5	C	M	Silt loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-077-UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781588° Long: -77.707608° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LcD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-077-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	15	✔	FACU
2. Tsuga canadensis	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Lonicera tatarica	5		FACU
3. Rubus sp.	15	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5')			
1. Poa sp.	30	✔	ND
2. Microstegium vinimeum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-077-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-078-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782352° Long: -77.707893° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Perennial hillside seeps and springs provide hydrology to the wetlands that flatten out in the topography. The delineation follows hydric soils and hydric vegetation that are different from upland areas. The wetland has multiple seeps and drainage patterns throughout the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-078-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2. Cornus amomum	5	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Onoclea sensibilis	20	✔	FACW
2. Sphagnum sp.	30	✔	ND
3. Microstegium vimineum	30	✔	FAC
4. Carex lurida	10		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-078-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/1	60	10YR4/6	40	C	M	Clay	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-078-UPL
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782705° Long: -77.707503° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-078-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	5	✔	FACU
2. Tsuga canadensis	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Lonicera tatarica	5		FACU
3. Rubus sp.	15	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5')			
1. Poa sp.	30	✔	ND
2. Microstegium vinimeum	20	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-078-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-079-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783692° Long: -77.708023° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC), Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Perennial hillside seeps and springs provide hydrology to the wetlands that flatten out in the topography. The delineation follows hydric soils and hydric vegetation that are different from upland areas. The wetland has multiple seeps and drainage patterns throughout the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-079-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	10		FACW
2. Microstegium vimineum	20	✔	FAC
3. Sphagnum sp.	5		ND
4. Symplocarpus foetidus	15		OBL
5. Carex stricta	20	✔	OBL
6. Carex lurida	10		OBL
7. Juncus effusus	5		FACW
8. Solidago sp.	5		ND
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-079-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/1	95	10YR4/4	5	C	M	Silt Clay Loam	
3-16	10YR6/1	50	10YR5/8	50	C	M	Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-079-PSS
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784373° Long: -77.707262° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is adjacent to the PEM section and has the same hydrology. Although some upland vegetation is present, other hydric vegetation is dominant as well and there are hydric soils, surface water, and muck.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-079-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	2.5		FACU
2. Berberis tunbergii	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	17.5 = Total Cover		
50% of total cover: 8.75	20% of total cover: 3.5		
Herb Stratum (Plot size: 5')			
1. Microstegium vinimeum	30	✔	FAC
2. Phalaris arundinacea	35	✔	FACW
3. Carex stricta	10		OBL
4. Sphagnum sp.	2.5		ND
5. Onoclea sensibilis	5		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	82.5 = Total Cover		
50% of total cover: 41.25	20% of total cover: 16.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-079-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y5/2	95	2.5Y5/6	5	C	M	Silt Clay Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-079-PFO
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783814° Long: -77.708500° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Perennial hillside seeps and springs provide hydrology to the wetlands that flatten out in the topography. The delineation follows hydric soils and hydric vegetation that are different from upland areas. The wetland has multiple seeps and drainage patterns throughout the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-079-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	20	✔	FACW
2. Microstegium vinimeum	15	✔	FAC
3. Sphagnum sp.	5		ND
4. Phalaris arundinacea	10	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-079-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/6	10	C	M	Silt Clay Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/29/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-079-UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783252° Long: -77.707420° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-079-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	10	✔	FACU
2. Tsuga canadensis	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Lonicera tatarica	10	✔	FACU
3. Rubus sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5')			
1. Poa sp.	25	✔	ND
2. Microstegium vinimeum	10	✔	FAC
3. Dacus carota	5		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-079-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/30/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-080-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7831443° Long: -77.709191° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland has formed as a result of grading along the road. The wetland is in a lower topographical area than the uplands and has hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-10

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-080-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Onoclea sensibilis	30	✔	FACW
2. Microstegium vimineum	60	✔	FAC
3. Sphagnum sp.	10		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-080-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Silty Clay Loam	
2-6	10YR5/1	90	10YR3/6	10	C	M	Silty Clay Loam	
6-10	10YR6/1	90	10YR5/4	10	C	M	Silty Clay Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/30/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-081-PEM
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785158° Long: -77.710966° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is in the floodway and floodplain of Spring Creek. A majority of the wetland is on the western bank. The delineation follows the edge of Spring Creek and the gravel road that runs adjacent to it. The wetland is in a lower topographical area than the uplands and has hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-081-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	5		FACW
2. Microstegium vinimeum	25	✔	FAC
3. Onoclea sensibilis	15		FACW
4. Carex stricta	5		OBL
5. Carex lurida	5		OBL
6. Solidago sp.	5		ND
7. Phalaris arundinacea	40	✔	FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-081-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.2YR4/2	90	7.5YR4/4	10	C	M	Sandy Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/30/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-080-081-UPL
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785203° Long: -77.710831° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-080-081-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus sylvestris	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	60	✔	ND
2. Daucus carota	20	✔	UPL
3. Solidago sp.	20	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-080-081-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	7.5YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-082-PEM
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784938° Long: -77.711687° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland receives hydrology from hillside seeps and the POW portion of the WL above it. There are drainage patterns coming from the pond that run through the wetland. The delineation follows areas of surface water that is not present in upland, there is obvious hydric vegetation present that runs down the slope through the wetland. The wetland starts as an open field and developed into a clear drainage.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes ✔ No _____ Depth (inches): 14
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-082-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	5	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	30	✔	FACW
2. Microstegium vinimeum	30	✔	FAC
3. Solidago sp.	10		ND
4. Cardamine pensylvanica	5		FACW
5. Juncus effusus	5		OBL
6. Spagnum sp.	5		ND
7. Typha latifolia	5		OBL
8. Epilobium sp.	2.5		ND
9. Carex lurida	2.5		OBL
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-082-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5Y4/2	95	5Y5/6	5	C	M	Sandy Clay Loam	
6-16	5Y5/2	60	5Y5/6	40	C	M	Clay Loam	Water at 14 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/30/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-082-POW
Investigator(s): LTZ, CML, AEH, JK Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784357° Long: -77.711632° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Man made pond collecting seeps.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 2-24
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, a perennial high water table, and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-082-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	15	✔	OBL
2. Phalaris arundinacea	5	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-082-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR4/2	90	7.5YR4/4	10	C	M	Sandy Loam	Inundated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-083-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785575° Long: -77.711631° Datum: WGS-84
Soil Map Unit Name: Murril channery silt loam (MuB, MuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is within the floodway/floodplain of Spring Creek. The delineation follows a low lying area adjacent to Spring Creek that included floodplain benches. There are obvious drainage patterns, surface water, hydric vegetation, and hydric soils that differ from the wetlands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal, perennial seeps and a seasonally high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-083-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	25	✔	OBL
2. Microstegium vinimeum	25	✔	FAC
3. Phalaris arundinacea	20	✔	FACW
4. Impatiens capensis	2.5		FACW
5. Juncus effusus	20	✔	OBL
6. Solidago sp.	2.5		ND
7. Onoclea sensibilis	5		FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-083-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silt Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-084-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783550° Long: -77.710123° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is within the floodway/floodplain of Spring Creek. The delineation follows a low lying area adjacent to Spring Creek that included floodplain benches. There are obvious drainage patterns, surface water, hydric vegetation, and hydric soils that differ from the wetlands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal, perennial seeps and a seasonally high water table provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-084-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20	✔	OBL
2. Microstegium vinimeum	50	✔	FAC
3. Onoclea sensibilis	20	✔	FACW
4. Solidago sp.	5		ND
5. Juncus effusus	2.5		OBL
6. Verbena hastata	2.5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-084-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/6	10	C	M	Silt Loam	Water at 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-085-PEM
Investigator(s): LTZ, CML, JMM, ASH, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782918° Long: -77.712532° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fueled by a collection of mountain seeps. Water drains and allows hydrophytic vegetation to grow. The delineation includes some areas with Japanese barberry but always has hydrology, other hydrophytic vegetation, and good soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-085-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	15		OBL
2. Microstegium vinimeum	20	✔	FAC
3. Phalaris arundinacea	15		FACW
4. Solidago sp.	2.5		ND
5. Lysimachia nummularia	2.5		FACW
6. Carex stricta	5		OBL
7. Juncus effusus	10		FACW
8. Onoclea sensibilis	10		FACW
9. Impatiens capensis	20	✔	FACW
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-085-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR4/2	100					Silt Clay Loam	Water at 6 inches
8-16	7.5YR4/2	60	7.5YR5/6	40	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-085-PSS
Investigator(s): LTZ, CML, JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782772° Long: -77.712094° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Water from groundwater seep collected in this geomorphic position bowl, delineation is based off the topography. PSS vegetation is not great, but hydrophytes underneath are suitable.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-085-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	20	✔	FACU
2. Elaeagnus umbellata	15	✔	FACU
3. Acer rubrum	20	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	10	✔	FACW
2. Impatiens capensis	25	✔	FACW
3. Microstegium vinimeum	10	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-085-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y4/1	75	2.5Y5/6	25	C	M	Silty Clay Loam	Water at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-082-085, 103 UP
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782772° Long: -77.712094° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-82-85,103 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	15	✔	FACU
2. Rosa multilfora	15	✔	FACU
3. Berberis thunbergii	5	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	5		FACU
2. Dipsacus fullonum	25	✔	FACU
3. Solidago sp.	25	✔	ND
4. Poa sp.	10		ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-082-085, 103 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-086-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784786° Long: -77.708246° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodway/floodplain of S-042-PER. It receives regular hydrology from laying with a depression that runs along the stream. Delineation follows the low lying area adjacent to the stream where the hydric vegetation and floodplain benches are.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal flooding, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-086-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Symplocarpus foetidus	25	✔	OBL
2. Microstegium vimineum	25	✔	FAC
3. Solidago sp.	10		ND
4. Carex stricta	20	✔	OBL
5. Alliaria petiolata	2.5		FACU
6. Phalaris arundinacea	10		FACW
7. Sphagnum sp.	2.5		ND
8. Impatiens capensis	5		FACW
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-086-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	85	10YR4/6	15	C	M	Silt Loam	Some gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 03/30/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-086-UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784801° Long: -77.708315° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-086-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus sylvestris	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 0)			
1. Berberis tunbergii	5		FACU
2. Rosa multiflora	30	✔	FACU
3. Lonicera tatarica	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5')			
1. Cirsium sp.	5		FACU
2. Dacus carota	5		UPL
3. Solidago sp.	30	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-086-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-087-PEM
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786724° Long: -77.708782° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland drains from the above slope systems. There are clear drainage patterns and hydric soils. A large basin for the delineation was following stands of blue vervain. Upland areas had no blue vervain. The wetland has some upland vegetation, but is dominated by hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-087-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FACW
2. Sphagnum sp.	2.5		ND
3. Solidago sp.	2.5		ND
4. Poa sp.	2.5		ND
5. Verbena hastata	20	✔	FACW
6. Erigeron annuus	2.5		FACU
7. Microstegium vinimeum	20	✔	FAC
8. Cardamine pensylvanica	20	✔	FACW
9. Asclepias sp.	2.5		ND
10. Cirsium discolor	2.5		UPL
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-087-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/3	100					Silt Loam	
4-16	5Y4/2	95	5Y6/8	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: State College / Centre Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-088-PEM
Investigator(s): LTZ, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785045° Long: -77.710522° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Delineation follows reed canarygrass and a low lying drainage pattern from the slope above.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-088-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Epilobium ciliatum	20	✔	FAC
2. Phalaris arundinacea	45	✔	FACW
3. Poa sp.	5		ND
4. Solidago sp.	5		ND
5. Microstegium vinimeum	20	✔	FAC
6. Setaria italica	5		FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-088-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	5Y5/2	90	5Y6/6	10	C	M	Silt clay loam	Rock at 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-087-088-UPL
Investigator(s): LTZ, CML, JMM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785045° Long: -77.710522° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-087-088-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	✔	FACU
2. Quercus alba	30	✔	FACU
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	15	✔	ND
2. Dipsacus fullonum	15	✔	FACU
3. Solidago sp.	10	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-087-088-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/3	100					Silt Loam	
12+							Rock	Rock present below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-089-PEM
Investigator(s): LTZ, CML, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778264° Long: -77.724984° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF), Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is in a hillside seep with surface water, hydric soils, and water draining through it towards a drainage pattern. Delineation follows hydric vegetation and areas with surface water that collects at the bottom of the slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 12
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-089-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✔	OBL
2. Poa sp.	20	✔	ND
3. Juncus effusus	5		OBL
4. Microstegium vinimeum	10		FAC
5. Sphagnum sp.	5		ND
6. Impatiens capensis	30	✔	FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-089-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR4/2	100					Silt Loam	
2-16	10YR5/1	70	10YR5/6	20	C	M	Clay	Water at 12 inches
			5LEY16/N	10	D	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-089-UPL
Investigator(s): LTZ, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 4-8
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778245° Long: -77.724611° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF), Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-089-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Ligustrum vulgare	2.5	✔	FACU
2. Rosa multiflora	2.5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Taraxacum sp.	20	✔	ND
2. Alliaria petiolata	20	✔	FACU
3. Trifolium repens	5		UPL
4. Poa sp.	50	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-089-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-090-PEM
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780594° Long: -77.721200° Datum: WGS-84
Soil Map Unit Name: Rubble land (Ru) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The wetland receives hydrology from a hillside seep. The delineation follows hydric soils and a topographical change from upland areas. S-LTZ-051 flows through the wetland and then discharges into an intermittent part of the channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-090-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Viola cucullata	30	✔	FACW
2. Carex sp.	60	✔	75%
3. Dennstaedita punctilobula	10		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-090-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Organic	
2-5	10YR5/1	100					Sandy Loam	
5-12	10YR5/2	100					Sandy Loam	
12-16	10YR6/1	75	10YR5/6	25	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-090-UPL
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780522° Long: -77.721461° Datum: WGS-84
Soil Map Unit Name: Rubble land (Ru) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-090-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2. Prunus serotina	25	✔	FACU
3. Betula lenta	25	✔	FACU
4.			
5.			
6.			
7.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Podophyllum peltatum	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-090-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-091-PEM
Investigator(s): LTZ, CML, ASH, JMM, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Bench Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783637° Long: -77.713435° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench of S-LTZ-045-PER. The delineations follows a pocket of hydric soils and hydrophytic vegetation within the banks of the channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal flooding, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-091-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	40	✔	FACW
2. Ranunculus repens	5		FAC
3. Phalaris arundinancea	30	✔	FACW
4. Microstegium vinimeum	5		FAC
5. Sphagnum sp.	20	✔	ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-091-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	95	10YR5/2	5	C	M	Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 04/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-091-UPL
Investigator(s): LTZ, CML, AHE,JMM, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782826° Long: -77.712283° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-091-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	15	✔	FACU
2. Tsuga canadensis	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	20	✔	FACU
2. Lonicera tatarica	5	✔	FACU
3. Rosa multiflora	15	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	5		FACU
2. Dipsacus fullonum	5		FACU
3. Solidago sp.	10	✔	ND
4. Poa sp.	10	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-091-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-092-PEM
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778710° Long: -77.721392° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-092-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Juncus effusus	25	✔	FACW
2. Solidago sp.	5		ND
3. Impatiens capensis	25	✔	FACW
4. Carex stricta	5		OBL
5. Phalaris arundinacea	5		FACW
6. Sphagnum sp.	2.5		ND
7. Onoclea sensibilis	2.5		FACW
8. Scirpus cyperinus	2.5		OBL
9. Osmunda cinnamomea	2.5		FACW
10. Carex sp.	5		75%
11. Microstegium vivimeum	20	✔	FAC
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. - 75% FAC-OBL

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-092-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					Silt Loam	Water at 4 inches
6-16	10YR5/2	85	10YR5/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-092-PSS
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778931° Long: -77.721185° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-092-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	15	✔	FACU
2. Lindera benzoin	35	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5')			
1. Onoclea sensibilis	5		FACW
2. Osmundastrum cinnamomeum	15	✔	FACW
3. Viola sp.	5		ND
4. Carex sp.	5		ND
5. Impatiens capensis	15	✔	FACW
6. Sphagnum sp.	5		ND
7.	5		FACW
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-092-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR2/1	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-092-POW
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778861° Long: -77.721940° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
A man-made pond that collects hydrology from many seeps and channels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-092-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	50	✔	OBL
2. Juncus effusus	50	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-092-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Soils were not taken due to deep surface water. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-092-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-092-UPL-Berm
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778700° Long: -77.721563° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland berm within the WL-LTZ-092 Wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-092-UPL-Berm

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2. Elaeagnus umbellata	5		NS
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Dennstaedita punctilobula	10	✔	FACU
2. Microstegium vinimeum	10	✔	FAC
3. Solidago sp.	25	✔	ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-092-UPL-Berm

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-093-PEM
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779313° Long: -77.722694° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is down-gradient of WL-LTZ-092-POW. The wetland is fueled by seeps and surface water runoff from the pond. The delineation follows clear areas of hydrophytic vegetation that differ from surround autumn olive. There was surface water and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-093-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rubus sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Onoclea sensibilis	5		FACW
2. Solidago sp.	30	✔	ND
3. Phalaris arundinacea	30	✔	FACW
4. Impatiens capensis	20	✔	FACW
5. Microstegium vinimeum	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-093-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR5/1	90	10YR4/6	10	C	M	Clay Loam	
8-16	10YR5/1	70	10YR5/6	30	C	M	Clay Loam	Water at 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-093-PSS
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779489° Long: -77.722668° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is down-gradient of WL-LTZ-092-POW. The wetland is fueled by seeps and surface water runoff from the pond. The delineation follows clear areas of hydrophytic vegetation that differ from surrounding autumn olive. There was surface water and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-093-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Osmunda cinnamomea	10		FACW
2. Sphagnum sp.	20	✔	ND
3. Microstegium vinimeum	20	✔	FAC
4. Impatiens capensis	20	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-093-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR5/1	90	10YR4/6	10	C	M	Clay Loam	
8-16	10YR5/1	70	10YR5/6	30	C	M	Clay Loam	Water at 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-093-UPL
Investigator(s): LTZ, CML, AEH, BPH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779197° Long: -77.722028° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-093-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	10	✔	FACU
2. Elaeagnus umbellata	10	✔	FACU
3. Rosa multiflora	10	✔	FACU
4. Rubus sp.	10	✔	ND
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	40	✔	ND
2. Alliaria petiolata	10		FACU
3. Dennstaedita punctilobula	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-093-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Silt Loam	
3-16	10YR6/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-094-PEM
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779167° Long: -77.722844° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
The seep was down-gradient of the pond. The wetland had hydric vegetation and hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-094-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			*
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	40	✔	FACW
2. Carex sp.	25	✔	75%
3. Solidago sp.	20	✔	ND
4. Alliaria petiolata	5		FACU
5. Viola sp.	10		ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-094-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR4/1	100					Loam	
2-16	10YR7/1	50	10YR5/6	50	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-094-UPL
Investigator(s): LTZ, CML, AEH, BPH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779197° Long: -77.722802° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-094-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	10	✔	FACU
2. Elaeagnus umbellata	10	✔	FACU
3. Rosa multiflora	10	✔	FACU
4. Rubus sp.	10	✔	ND
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	40	✔	ND
2. Alliaria petiolata	10		FACU
3. Dennstaedita punctilobula	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-094-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Silt Loam	
3-16	10YR6/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-095-PEM
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778868° Long: -77.722541° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The delineation followed saturation and hydrophytes corresponding with the seep coming from the pond berm.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seeps from the pond provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-095-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	50	✔	OBL
2. Microstegium vinimeum	40	✔	FAC
3. Juncus effusus	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-095-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR4/1	80	5YR3/3	20	C	M	Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/03/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-095-PSS
Investigator(s): LTZ, CML, BPH, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778857° Long: -77.722654° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a seep coming from the pond berm. The delineation followed surface water, saturation, drainage patterns and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1 inch
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seeps from the pond provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-095-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1. Berberis tunbergii	25	✔	FACU
2. Elaeagnus umbellata	10		FACU
3. Lindera benzoin	25	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	40	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-095-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR4/1	80	5YR3/3	20			Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-096-PEM
Investigator(s): LTZ, BPH, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778551° Long: -77.722678° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:
There are seeps from the slopes and the delineation followed the drain patterns and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 0-2
Water Table Present? Yes ✔ No ____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and perennial and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-096-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Eleocharis palustris	20	✔	OBL
2. Rumex crispus	10		FAC
3. Cyperus esculentus	20	✔	FACW
4. Poa sp.	50	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Seasonally mowed

SOIL

Sampling Point: WL-LTZ-096-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y5/1	90	10YR3/6	10	C	M	Silty Clay Loam	
3-8	2.5Y5/1	50	10YR46	50	C	M	Silty Clay Loam	Water at 4 inches
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Soils appeared to be disturbed

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-097-PEM
Investigator(s): LTZ, BPH, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778636° Long: -77.722995° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
There are seeps from the slopes and the delineation followed the drain patterns and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 0-2
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Perennial and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-097-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Eleocharis palustris	10		OBL
2. Carex lurida	10		OBL
3. Cyperus esculentus	10		FACW
4. Poa sp.	30	✔	ND
5. Impatiens capensis	40	✔	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Seasonally mowed

SOIL

Sampling Point: WL-LTZ-097-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y5/1	50	10YR3/6	50	C	M	Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Soils appeared to be disturbed

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-095-097-UPL
Investigator(s): LTZ, CML, ASH, BPH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779028° Long: -77.722402° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-095-097-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	10	✔	FACU
2. Elaeagnus umbellata	10	✔	FACU
3. Rosa multiflora	10	✔	FACU
4. Rubus sp.	10	✔	ND
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	40	✔	ND
2. Alliaria petiolata	10		FACU
3. Dennstaedita punctilobula	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-095-097-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					Silt Loam	
3-16	10YR6/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-098-PEM
Investigator(s): LTZ, BPH, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778872° Long: -77.724348° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Delineation followed saturated mucky soils, strong hydrophytes and obvious hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-098-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✔	OBL
2. Juncus effusus	25	✔	OBL
3. Microstegium vimineum	10		FAC
4. Impatiens capensis	20	✔	FACW
5. Persicaria sagittata	5		OBL
6. Onoclea sensibilis	10		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-098-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/1	80	10YR4/6	10	C	M	Silty Clay Loam	Water at 4 inches
			10YR3/6	10	C	M	Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-099-PEM
Investigator(s): LTZ, BPH, CML, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779904° Long: -77.723747° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Delineation follows obvious hydrology, soils and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, perennial seeps and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-099-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✔	OBL
2. Microstegium vimineum	30	✔	FAC
3. Impatiens capensis	20	✔	FACW
4. Onoclea sensibilis	20	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-099-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	85	10YR3/6	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-100-PEM
Investigator(s): LTZ, BPH, CML, AH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780289° Long: -77.725197° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Delineation follows drainage patterns and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-100-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	15		OBL
2. Axonopus fissifolius	5		FAC
3. Packera aurea	5		FACU
4. Poa sp.	5		ND
5. Microstegium vimineum	30	✔	FAC
6. Solidago sp.	15		ND
7. Onoclea sensibilis	15		FACW
8. Persicaria sagittata	5		OBL
9. Impatiens capensis	5		FACW
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

SOIL

Sampling Point: WL-LTZ-100-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR5/2	95	10YR5/4	5	C	M	Silt Loam	
14-16	2.5Y5/2	40	2.5Y5/3	50	M	M	Silt Loam	
			10YR4/6	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-101-PEM
Investigator(s): LTZ, BPH, CML, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780541° Long: -77.724223° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC), Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Delineation follows drainage patterns and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-101-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	25	✔	OBL
2. Microstegium vimineum	30	✔	FAC
3. Impatiens capensis	25	✔	FACW
4. Poa sp.	10		ND
5. Onoclea sensibilis	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

SOIL

Sampling Point: WL-LTZ-101-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y5/2	90	2.5Y5/6	5	C	M	Silty Clay Loam	
			2.5Y4/6	5	C	M	Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-098-101-UPL
Investigator(s): LTZ, CML, ASH, BPH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778601° Long: -77.723932° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-098-101-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	40	✔	FACU
2. Elaeagnus umbellata	40	✔	FACU
3. Rosa multiflora	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-098-101-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	100					Organic	
2-5	10YR3/3						Loam	
5+							Rock	Rock below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-102-PEM
Investigator(s): LTZ, BPH, CML, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779342° Long: -77.723593° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is located within the floodplain of S-LTZ-60. The delineation followed saturated soils, microtopography breaks and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-4

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and routine flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-102-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens capensis	50	✔	FACW
2. Carex gracillima	50	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	50	x 2 =	100
FAC species		x 3 =	
FACU species	50	x 4 =	200
UPL species		x 5 =	
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-102-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/1	90	10YR3/6	10	C	M	Silt Clay Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/04/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-102-UPL
Investigator(s): LTZ, CML, ASH, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779360° Long: -77.723472° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-102-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula lenta	35	✔	FACU
2. Pinus strobus	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	35	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5©)			
1. Carex sp.	2.5	✔	75%
2. Podophyllum peltatum	2.5	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL Sampling Point: WL-LTZ-102-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Organic material	
2-10	10YR5/6	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-103-POW
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.787954° Long: -77.712093° Datum: WGS-84
Soil Map Unit Name: Opequon-Hagerstown complex (OhB), Edom silt loam (EdB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a constructed pond at a nursery. It is assumed it is used as an irrigation system.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1-72
Water Table Present?	Yes ✔	No _____	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-103-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

No vegetation present.

SOIL

Sampling Point: WL-LTZ-103-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

No soils present. Pond was rock lined.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-104-PEM
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786555° Long: -77.697741° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A high water table, surface water runoff, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-104-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	45	✔	FACW
2. Juncus effusus	5		FACW
3. Carex sp.	5		75%
4. Barbarea orthoceras	10		ND
5. Typha latifolia	35	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-104-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/2	98	10YR4/6	2	C	M	Silt Loam	Water at 10 inches
6-14	10YR5/2	90	10YR4/6	10	C	M	Silt Loam	
14+							Rock	Rock below 14 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-104-UPL
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786265° Long: -77.698139° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-104-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Festuca rubra	60	✔	FACU
2. Taraxacum officinale	20	✔	FACU
3. Trifolium repens	10		FACU
4. Plantago lanceolata	5		UPL
5. Galium boreale	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-104-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-105-PEM
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778283° Long: -77.726000° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-105-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	80	✔	FAC
2. Sphagnum sp.	10		ND
3. Symphyotrichum novae-angliae	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

SOIL

Sampling Point: WL-LTZ-105-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/1	95	10YR3/6	5	C	M	Silty Clay Loam	
8-16	10YR5/2	90	10YR4/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-105-UPL
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778291° Long: -77.725862° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-105-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	50	✔	FACU
2. Rosa multiflora	5		FACU
3. Lonicera tatarica	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-105-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-106-PEM
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778078° Long: -77.726280° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-<1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-106-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	40	✔	FAC
2. Sphagnum sp.	5		ND
3. Symphyotrichum novae-angliae	15	✔	FACW
4. Onoclea sensibilis	5		FACW
5. Juncus effusus	5		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not Determined

SOIL

Sampling Point: WL-LTZ-106-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	90	10YR3/6	10	C	M	Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/10/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-106-UPL
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777965° Long: -77.726160° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-106-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	50	✔	FACU
2. Rosa multiflora	5		FACU
3. Lonicera tatarica	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-106-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-107-PEM
Investigator(s): LTZ, DJW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783713° Long: -77.695728° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): <1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, perennial high water table and seasonal flooding provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-107-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lindera benzoin	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✔	FACW
2. Impatiens capensis	20	✔	FACW
3. Onoclea sensibilis	10		FACW
4. Mentha spicata	5		FACW
5. Euthanmia graminifolia	10		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-107-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/2	80	10YR4/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-107-UPL
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783696° Long: -77.695372° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-107-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	✔	FAC
2. Carya ovata	5		FACU
3. Prunus serotina	5		FACU
4. Prunus padus	5		FACU
5. Betula lenta	10	✔	FACU
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	40	✔	FACU
2. Lonicera tatarica	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Podophyllum peltatum	5	✔	FACU
2. Solidago rugosa	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-107-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	90					Silty Clay Loam	
	10YR4/4	10					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/16/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-108-PEM
Investigator(s): LTZ, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795028° Long: -77.645921° Datum: WGS-84
Soil Map Unit Name: Berks and Weikert soils (BMF), Melvin silt loam (Mm), Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): <1
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial and seasonal seeps and springs (defunct spring house), surface water runoff and seasonal flooding provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-108-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	20	✔	FACW
2. Onoclea sensibilis	10		FACW
3. Impatiens capensis	10		FACW
4. Juncus effusus	5		OBL
5. Solanum dulcamara	5		FAC
6. Acorus calamus	10		OBL
7. Lemnoideae sp.	2.5		ND
8. Epilobium sp.	2.5		100%
9. Barbarea vulgaris	10		FAC
10. Carex sp.	10		75%
11. Sphagnum sp.	5		ND
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Additional herb stratum: Typha sp. (5%), ND*... Verbena hastata (5%), FACW
ND- Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

Epilobium sp. - 100% FAC-OBL
Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-108-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/4	10	C	M	Silty Clay Loam	Mucky core
0-6	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Reed canarygrass core
6-16	10YR4/2	90	10YR4/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/16/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-108-PSS
Investigator(s): LTZ, CML Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794799° Long: -77.645802° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): <1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial and seasonal seeps and springs (defunct spring house), surface water runoff and seasonal flooding provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-108-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Cladium mariscoides	85	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-108-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/2	100					Silt Loam	
2-16	10YR3/2	70	10YR4/4	10	C	M	Silty Clay Loam	
			10YR4/6	10			Silty Clay Loam	
			10YR5/4	5			Silty Clay Loam	
			10YR5/6	5			Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/16/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-108-UPL
Investigator(s): LTZ, CML, AEH, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.794455° Long: -77.644867° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-108-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula lenta	15	✔	FACU
2. Prunus serotina	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Lobelia inflata	10		FACU
2. Cirsium discolor	10		FACU
3. Dipsacus fullonum	10		FACU
4. Cichorium intybus	10		FACU
5. Alliaria petiolata	10		FACU
6. Taraxacum officinale	15	✔	FACU
7. Daucus carota	5		UPL
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-108-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10-16	10YR4/4	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-109-PEM
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795620° Long: -77.644885° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB), Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, perennial high water table, perennial seeps, and surface water run off provide the sources of hydrology

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-109-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Setaria pumila	20	✔	FAC
2. Impatiens capensis	10		FACW
3. Typha latifolia	20	✔	OBL
4. Juncus effusus	20	✔	FACW
5. Scirpus atrovirens	5		OBL
6. Lysimachia nummularia	2.5		FACW
7. Onoclea sensibilis	10		FACW
8. Persicaria sagittata	2.5		OBL
9. Leersia oryzoides	5		OBL
10. Verbena hastata	2.5		FACW
11. Scirpus cyperinus	2.5		FACW
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-109-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR5/2	80	10YR4/4	20	C	M	Silty Clay Loam	
12-16	10YR5/1	80	10YR4/6	10	C	M	Silty Clay Loam	
	10YR4/4	10					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-109-PSS
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796302° Long: -77.645207° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2
Water Table Present? Yes _____ No ✔ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, perennial high water table, perennial seeps, and surface water run off provide the sources of hydrology

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-109-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Cornus amomum	20	✔	FACW
2. Sambucus nigra	20	✔	FAC
3. Salix nigra	20	✔	OBL
4. Viburnum dentatum	10		FAC
5. Ligustrum vulgare	10		FACU
6. Rosa multiflora	10		FACU
7. Acer negundo	10		FAC
8.			
9.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-109-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR5/2	80	10YR4/4	20	C	M	Silty Clay Loam	
12-16	10YR5/1	80	10YR4/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-109-UPL
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796426° Long: -77.644696° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-109-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Rosa multiflora	15	✔	FACU
2. Rhus typhina	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5')			
1. Trifolium repens	25	✔	FACU
2. Poa sp.	10		ND
3. Dipsacus fullonum	20	✔	FACU
4. Plantago major	10		FACU
5. Solidago altissima	20	✔	FACU
6. Parthenocissus quinquefolia	10		FACU
7. Taraxacum officinale	5		FACU
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-109-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR5/3	100					Silty Clay Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-110-PSS
Investigator(s): LTZ, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.799748° Long: -77.645817° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm), Dunning silty clay loam (Du) NWI classification: PFO1/SS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The delineation follows dense stands of hydrophytes coinciding with hydric soils. The wetland is within the floodplain of Sinking Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and surface water run off provide the sources of hydrology.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-110-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Symplocarpus foetidus	25	✔	OBL
2. Impatiens capensis	10		FACW
3. Onoclea sensibilis	10		FACW
4. Lysimachia nummularia	5		FACW
5. Carex stricta	25	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-110-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	95	7.5YR3/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-110-UPL
Investigator(s): LTZ, BPH, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798327 Long: -77.647648° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-110-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	5	✔	FAC
2. Juglans nigra	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	40	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Alliaria petiolata	40	✔	FACU
2. Solidago sp.	5		ND
3. Poa sp.	5		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-110-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-112-PEM
Investigator(s): LTZ, CML, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780808° Long: -77.722173° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is fueled by seasonal seeps and within the floodway of S-LTZ-050. There is surface water and the delineation follows hydric vegetation and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and seasonal or perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-112-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	20	✔	FACW
2. Carex lurida	5		OBL
3. Microstegium vinimeum	20	✔	FAC
4. Onoclea sensibilis	20	✔	FACW
5. Sphagnum sp.	5		ND
6. Lysimachia nummularia	5		FACW
7. Carex sp.	20	✔	75%
8. Viola sp.	5		ND
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-112-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	85	10YR3/6	15	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-112-UPL
Investigator(s): LTZ, CML, SNW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780522° Long: -77.721461° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-112-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2. Prunus serotina	25	✔	FACU
3. Betula lenta	25	✔	FACU
4.			
5.			
6.			
7.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Podophyllum peltatum	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-112-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					Silt Loam	
4-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/31/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-113-PEM
Investigator(s): LTZ, BPH, CML Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776009° Long: -77.732031° Datum: WGS-84
Soil Map Unit Name: Hazleton extremely stony sandy loam (HSD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): <1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and springs as well as surface water runoff provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-113-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Fraxinus pennsylvanica	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	25	✔	FACW
2. Carex lurida	25	✔	OBL
3. Microstegium vinimeum	25	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-113-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1							Organic	
1-5	10YR4/2	100					Loam	
5-14	10YR4/1	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: State College / Centre Sampling Date: 05/31/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-114-PEM
Investigator(s): LTZ, CML, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776951° Long: -77.732447° Datum: WGS-84
Soil Map Unit Name: Hazleton extremely stony sandy loam (HSD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and springs as well as surface water runoff provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-114-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Fraxinus pennsylvanica	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	25	✔	FACW
2. Carex lurida	25	✔	OBL
3. Microstegium vinimeum	25	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-114-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/2	90	10YR5/6	10	C	M	Silt Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/31/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-115-PEM
Investigator(s): LTZ, CML, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776480° Long: -77.732188° Datum: WGS-84
Soil Map Unit Name: Hazleton extremely stony sandy loam (HSD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and springs as well as surface water runoff provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-115-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Fraxinus pennsylvanica	25	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	25	✔	FACW
2. Cyperus rotundus	25	✔	OBL
3. Microstegium vinimeum	25	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-115-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/2	90	10YR5/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 05/31/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-113-115-UPL
Investigator(s): LTZ, CML, BPH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776021° Long: -77.731685° Datum: WGS-84
Soil Map Unit Name: Hazleton extremely stony sandy loam (HSD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-113-115-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	15	✔	FACU
2. Acer rubrum	15	✔	FACU
3. Quercus rubra	25	✔	FACU
4.			
5.			
6.			
7.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Dennstaedita punctilobula	15	✔	FACU
2. Parthenocissus quinquefolia	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-113-115-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-116-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 4-8
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781620° Long: -77.719789° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-4

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-116-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatients capensis	10		FACW
2. Carex sp.	25	✔	75%
3. Microstegium vinimeum	20	✔	FAC
4. Persicaria sagitatta	25	✔	OBL
5. Phalaris arundinacea	10		FACW
6. Agrostis gigantea	10		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-116-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y4/1	40	2.5Y5/6	5	C	M	Silt Loam	
	2.5Y4/2	55						
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-116-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7820456° Long: -77.718980° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a man-made pond that collects water from seeps and runoff.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2-12+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-116-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FACW
2. Agrostis gigantea	25	✔	FACW
3. Phragmites australis	25	✔	FACW
4. Nuphar sp.	25	✔	100%
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Nuphar sp. 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-116-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-116-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-116-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781989° Long: -77.719856° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-116-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Acer rubrum	15	✔	FACU
3. Quercus rubra	20	✔	FACU
4. Tsuga canadensis	5		FACU
5. Liriodendron tulipifera	5		FACU
6.			
7.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	15	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-116-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/6	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-117-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 12
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780139° Long: -77.718667° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam, steep (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-8

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-117-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20	✔	OBL
2. Dennstaedtia punctilobula	20	✔	FACU
3. Onoclea sensibilis	5		FACW
4. Microstegium vimineum	50	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-117-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y3/1	90	10YR3/6	10	C	M	Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-117-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779963° Long: -77.717561° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam, steep (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-117-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2. Quercus montana	25	✔	UPL
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis tunbergii	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-117-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/6	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-118-PSS
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780759° Long: -77.719975° Datum: WGS-84
Soil Map Unit Name: Rubble land (Ru) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a concave drainage pattern-like drainage landscape. A bowl with a collection of water is present in the ditch.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-10

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provides the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-118-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lindera benzoin	60	✔	FAC
2. Fraxinus pennsylvanica	20	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5©)			
1. Carex lurida	20	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-118-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	90	10YR4/4	10	C	M	Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-118-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780676° Long: -77.720020° Datum: WGS-84
Soil Map Unit Name: Rubble land (Ru) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-118-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2. Quercus montana	20	✔	UPL
3. Betula lenta	10		FACU
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-118-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/6	100					Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-119-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782001° Long: -77.720317° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a ponded system with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 12+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-119-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Acorus americanus	10	✔	OBL
2. Carex alopecoidea	10	✔	FACW
3. Nuphar sp.	5		100%
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Nuphar sp. - 100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-119-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-119-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-119-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782072° Long: -77.720118° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-119-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	40	✔	ND
2. Trifolium repens	30	✔	FACU
3. Phleum pratense	30	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-119-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR5/3	100					Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-120-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781979° Long: -77.720669° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a tight floodplain bench along a stream.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table, seasonal seeps, and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-120-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	10		OBL
2. Phalaris arundinacea	40	✔	FACW
3. Onoclea sensibilis	5		FACW
4. Microstegium vimineum	20	✔	FAC
5. Impatiens capensis	25	✔	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-120-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y4/2	85	7.5YR4/6	15	C	M	Silt Loam	Water at 0 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-120-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782144° Long: -77.720642° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-120-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	25	✔	ND
2. Festuca arundinacea	25	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-120-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	2.5YR5/3	100					Silty Clay Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-121-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783464° Long: -77.721881° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam, 8 to 15 percent slopes (AoC) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a ponded system with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 12+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Perennial seeps/springs and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-121-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation only around fringe.

SOIL Sampling Point: WL-LTZ-121-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-121-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-121-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783490° Long: -77.721538° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam, 3 to 8 percent slopes (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-121-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Festuca arundinacea	20		ND
3. Trifolium repens	5	✔	FACU
4. Dennstaedtia punctilobula	20	✔	FACU
5. Microstegium vimineum	5		FAC
6. Berberis thunbergii	5		FACU
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-121-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-122-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783678° Long: -77.722390° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a depressional wetland along S-LTZ-065

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-122-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20	✔	OBL
2. Impatiens capensis	50	✔	FACW
3. Solidago sp.	10		ND
4. Agrostis gigantea	10		FACW
5. Osmundastrum cinnamomeum	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-122-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	85	10YR3/6	15	C	M	Silty Clay Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-122-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783690° Long: -77.722185° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-122-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	20	✔	ND
2. Festuca arundinacea	20		NS
3. Trifolium repens	5	✔	FACU
4. Dennstaedtia punctilobula	20	✔	FACU
5. Microstegium vimineum	5		FAC
6. Berberis thunbergii	5		FACU
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-122-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-123-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783858° Long: -77.722883° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a tight floodplain bench along S-LTZ-065

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A seasonal high water table and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-123-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	70	✔	FACW
2. Alliaria petiolata	5		FACU
3. Cirsium discolor	5		UPL
4. Impatiens capensis	5		FACW
5. Microstegium vimineum	10		FAC
6. Onoclea sensibilis	5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-123-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	10YR3/4	5	C	M	Silt Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-123-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783976° Long: -77.722770° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-123-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Cirsium discolor	20	✔	UPL
2. Alliaria petiolata	20	✔	FACU
3. Phytolacca americana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-123-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-124-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784130° Long: -77.723221° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A seasonal high water table and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-124-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex sp.	20	✔	75%
2. Ranunculus repens	10		FAC
3. Agrostis gigantea	10		FACW
4. Impatiens capensis	35	✔	FACW
5. Microstegium vimineum	25	✔	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-124-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	95	10YR3/4	5	C	M	Loam	Water at 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-124-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784187° Long: -77.723065° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-124-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	20	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Cirsium discolor	20	✔	UPL
2. Alliaria petiolata	20	✔	FACU
3. Phytolacca americana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-124-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-125-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781448° Long: -77.717155° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a man-made pond with surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): >12"
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0"

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-125-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5)			
1. Nelumbo nucifera	10	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-125-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								N/A*

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-125-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: State College / Centre Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-126-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781273° Long: -77.716748° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Wetland is a man-made pond with surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ✔ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 12+
Water Table Present? Yes ____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-126-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-126-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								N/A*

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-126-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-125-126-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781160° Long: -77.716789° Datum: WGS-84
Soil Map Unit Name: Buchannan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-125-126-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	15	✔	FACU
2. Podophyllum peltatum	5		FACU
3. Ulmus americana	5		FACW
4. Betula lenta	15	✔	FACU
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Dennstaedtia punctilobula	20	✔	FACU
2. Alliaria petiolata	20	✔	FACU
3. Cirsium discolor	5		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-125-126-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/4	100					Silt Loam	
5+							Rock	Rock below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-127-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780814° Long: -77.717332° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-127-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	30	✔	FAC
2. Impatiens capensis	40	✔	FACW
3. Persicaria sagittata	30	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-127-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/4	10	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-127-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780547° Long: -77.717000° Datum: WGS-84
Soil Map Unit Name: Laidig extremely stony loam (LDF) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-127-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	20	✔	FAC
2. Alliaria petiolata	20	✔	FACU
3. Asclepias syriaca	10	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-127-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/4	100					Silt Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-128-PEM/PFO
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781531° Long: -77.718426° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A seasonal high water table and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-128-PEM/PFO

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Leersia oryzoides	25	✔	OBL
2. Impatiens capensis	50	✔	FACW
3. Lysimachia nummularia	25	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-128-PEM/PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/4	10	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-128-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781355° Long: -77.718559° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-128-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	20	✔	FAC
2. Alliaria petiolata	20	✔	FACU
3. Asclepias syriaca	10	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-128-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/4	100					Silt Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-129-PEM
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 2-4
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781735° Long: -77.718561° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-129-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	25	✔	FACW
2. Persicaria sagittata	25	✔	OBL
3. Phalaris arundinacea	20	✔	FACW
4. Microstegium vimineum	20	✔	FAC
5. Solidago gigantea	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-129-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/1	90	10YR4/4	10	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/15/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-129-POW
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat, Bowl Local relief (concave, convex, none): None Slope (%): 1-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781725° Long: -77.718562° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland possesses both PEM and POW portions. POW area is a ponded system with deep surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)
- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 4-16
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A seasonal high water table and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-129-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex sp.	10	✔	75%
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL Sampling Point: WL-LTZ-129-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								N/A*

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

*These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-129-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-129-UPL
Investigator(s): LTZ, DJW, AB Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.781401° Long: -77.718431° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-129-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Berberis thunbergii	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	20	✔	FAC
2. Alliaria petiolata	20	✔	FACU
3. Asclepias syriaca	10	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-129-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/4	100					Silt Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-130-PEM
Investigator(s): L. Zugay, A. Eberly Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Drainage Local relief (concave, convex, none): Concave Slope (%): 15
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782417° Long: -77.719833° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Pennsylvania state wide drought watch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): -
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-130-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	25	✔	FACW
2. Cyperus esculentus	25	✔	FACW
3. Scirpus atrovirens	25	✔	OBL
4. Mentha spicata	15		FACW
5. Ranunculus repens	7.5		FAC
6. Lotus corniculatus	2.5		FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-130-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-130-UPL
Investigator(s): L. Zugay, A. Eberly Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783043° Long: -77.720635° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Pennsylvania state wide drought watch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-130-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Trifolium repens	25	✔	FACU
2. Poa sp.	25	✔	ND
3. Plantago major	15		FACU
4. Leucanthemum vulgare	10		UPL
5. Cichorium intybus	10		FACU
6. Duchesnea indica	15		FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-130-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-131-PEM
Investigator(s): L. Zugay, A. Eberly Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Bowl Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786811° Long: -77.725285° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Wetland is a large floodplain system in the floodplain of Spring Creek and a second perennial channel. Delineation followed lower elevation hydric soils and hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): -
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-131-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	80	✔	FACW
2. Impatiens capensis	10		FACW
3. Cyperus esculentus	5		FACW
4. Asclepias syriaca	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-131-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/2	100					Silty Clay Loam	
10-16	10YR3/2	80	5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-131-PSS
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Bowl Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785610° Long: -77.726771° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Pennsylvania state wide drought watch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): -
Water Table Present?	Yes ____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-131-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Sambucus nigra	25	✔	FAC
2. Salix nigra	20	✔	OBL
3. Cornus amomum	20	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	15	✔	FACW
2. Impatiens capensis	5	✔	FACW
3. Cyperus esculentus	2.5		FACW
4. Asclepias syriaca	2.5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	10	✔	ND
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-131-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/2	100					Silty Clay Loam	
10-16	10YR3/2	80	5YR3/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/20/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-131-UPL
Investigator(s): L. Zugay, A. Eberly Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10
Subregion (LRR or MLRA): MLRA 147 Lat: 40.787193° Long: -77.723754° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Pennsylvania state wide drought watch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-131-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10')			
1. Elaeagnus umbellata	15	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Zea mays	30	✔	ND
2. Asclepias syriaca	10		FACU
3. Solidago altissima	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-131-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/27/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-132-PEM
Investigator(s): LTZ, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Bottom lands Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798379° Long: -77.670742° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Main section of PEM core with surface water, muck, and a wide variety of hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-2
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table, seasonal flooding, surface water runoff, and seasonal seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-132-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Impatiens capensis	15		FACW
3. Typha latifolia	15		OBL
4. Cyperus esculentus	10		FACW
5. Scirpus atrovirens	10		OBL
6. Polygonum sagittatum	2.5		OBL
7. Juncus effusus	2.5		FACW
8. Onoclea sensibilis	5		FACW
9. Acorus americanus	10		OBL
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-132-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/1	80	7.5YR3/4	20	C	M	Silty Clay Loam	Water at 4 inches
6-16	10YR3/1	60	7.5YR5/6	20	C	M	Silty Clay Loam	
	10YR4/1	20			RM	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/27/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-132-PSS
Investigator(s): LTZ, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Bottom lands Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.798322° Long: -77.670923° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Multiple pockets of similar PSS within the large PEM system with surface water, muck, and a wide variety of hydrophytic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-2
Water Table Present? Yes ✔ No _____ Depth (inches): 4
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table, seasonal flooding, surface water runoff, and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-132-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1. Cornus racemosa	20	✔	FACW
2. Vaccinium corymbosum	20	✔	FACW
3. Salix nigra	15	✔	OBL
4. Elaeagnus angustifolia	10		FACU
5. Sambucus nigra	10		FAC
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5©)			
1. Eleocharis palustris	5	✔	OBL
2. Typha latifolia	10	✔	OBL
3. Onoclea sensibilis	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-132-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Clay Loam	Water at 4 inches
4-16	10YR4/2	70	10YR5/1	15	D	M	Clay Loam	
			7.5YR3/4	15	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 06/27/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-132-UPL
Investigator(s): LTZ, CML, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797233° Long: -77.667424° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-132-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer platanoides	10	✔	UPL
2. Tilia americana	15	✔	FACU
3. Tsuga canadensis	15	✔	FACU
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Lonicera tatarica	10	✔	FACU
2. Elaeagnus umbellata	10	✔	ND
3. Ligustrum vulgare	2.5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	22.5 = Total Cover		
50% of total cover: 11.25	20% of total cover: 4.5		
Herb Stratum (Plot size: 5©)			
1. Dipsacus fullonum	10	✔	FACU
2. Daucus carota	2.5		UPL
3. Solidago sp.	15	✔	ND
4. Poa sp.	10	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	37.5 = Total Cover		
50% of total cover: 18.75	20% of total cover: 7.5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-132-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/4	100					Silt Loam	
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-133-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775274° Long: -77.740882° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodplain of a channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-133-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Onoclea sensibilis	25	✔	FACW
2. Juncus effusus	25	✔	FACW
3. Eleocharis palustris	25	✔	OBL
4. Poa sp.	25	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-133-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR5/2	90	10YR4/6	10	C	M	Silty Clay Loam	
10-16	10YR5/2	90	10YR4/6	10	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-134-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776898° Long: -77.742151° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodplain of a channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-134-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Microstegium vimineum	20	✔	FAC
2. Typha latifolia	5		OBL
3. Impatiens capensis	5		FACW
4. Poa sp.	25	✔	ND
5. Carex alopecoidea	25	✔	FACW
6. Rumex crispus	10		FAC
7. Symphyotrichum sp.	10		ND
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-134-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	80	10YR4/6	10	C	M	Silty Clay Loam	
			7.5YR4/4	10				
8-16	10YR5/2	90	10YR4/4	10	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-135-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775701° Long: -77.740195° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Seasonal or perennial spring-fed wetland system

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-10

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps, seasonal flooding, a perennial high water table, and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-135-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	45	✔	FAC
2. Carex sp.	10		75%
3. Impatiens capensis	45	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL Sampling Point: WL-LTZ-135-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR5/2	90	10YR6/8	5	C	M	Silty Clay Loam	Water at 0 inches
			10YR4/4	5	C	M		
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-133-135-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776898° Long: -77.742151° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-133-135-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Lonicera tatarica	15	✔	FACU
3. Conium maculatum	5		FACW
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	15	✔	FACU
2. Trifolium repens	5		FACU
3. Poa sp.	5		ND
4. Dipsacus fullonum	15	✔	FACU
5. Sassafras albidum	15	✔	FACU
6. Plantago lanceolata	5		UPL
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis aestivalis	5	✔	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-133-135-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-136-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778238° Long: -77.741637° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-14

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-136-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Sagittaria sp.	30	✔	100%
2. Euthamia graminifolia	30	✔	FAC
3. Impatiens capensis	30	✔	FACW
4. Carex alopecoidea	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Sagittaria sp.100% FAC-OBL

SOIL

Sampling Point: WL-LTZ-136-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/2	90	10YR4/6	10	C	M	Silty Clay Loam	
14+							Rock	Rock below 14 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? Yes _____ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-136-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778265° Long: -77.741505° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-136-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Robinia pseudoacacia	20	✔	FACU
2. Juglans nigra	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5')			
1. Cirsium discolor	25	✔	UPL
2. Solidago rugosa	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-136-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/4	100					Silty Clay Loam	
14+							Rock	Rock below 14 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-137-PEM/POW
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Ponded area Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779777° Long: -77.741963° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is half PEM and half POW ponded area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ✔ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 4-18+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-137-PEM/POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Sagittaria sp.	20	✔	OBL
2. Phalaris arundinacea	20	✔	FACW
3. Typha latifolia	20	✔	OBL
4. Leersia oryzoides	20	✔	OBL
5. Lemna minor	15		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Sagittaria sp. 100% FAC-OBL

SOIL Sampling Point: WL-LTZ-137-PEM/PO\

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/2	90	10YR4/6	10	C	M	Silty Clay Loam	Fringe
6+							Clay Pan	Underlain by fragipan

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Soil samples taken along fringe of PEM/POW strata. These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-137-PEM/POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-137-UPL
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779555° Long: -77.741769° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-137-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea abies	25	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rubus sp.	25	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5')			
1. Poa sp.	25	✔	ND
2. Taraxacum officinale	25	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-137-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/4	100					Silty Clay Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-138-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): Concave Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778235° Long: -77.742372° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-8

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-138-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	35	✔	FACW
2. Phalaris arundinacea	35	✔	FACW
3. Ranunculus repens	10		FAC
4. Lysimachia nummularia	5		OBL
5. Poa sp.	5		ND
6. Carex sp.	5		75%
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

* Plants not identified to species were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-138-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	95	10YR4/6	5	C	M	Silty Clay Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-139-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775809° Long: -77.744848° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): -
Water Table Present?	Yes _____	No _____	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-8

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-139-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Onoclea sensibilis	20	✔	FACW
2. Impatiens capensis	5		FACW
3. Microstegium vimineum	20	✔	FAC
4. Euthamia graminifolia	20	✔	FAC
5. Asclepias syriaca	5		FACU
6. Ageratina sp.	20	✔	ND
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-139-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR5/2	80	10YR3/4	10	C	M	Silty Clay Loam	
			10YR4/4	10	C	M		
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-140-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775860° Long: -77.751262° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx), Buchanan channery loam (BxD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-140-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	20	✔	OBL
2. Phalaris arundinacea	5		FACW
3. Onoclea sensibilis	20		FACW
4. Euthamia graminifolia	20	✔	FAC
5. Impatiens capensis	5		FACW
6. Pilea fontana	20	✔	FACW
7. Alliaria petiolata	5		FACU
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-140-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-140-PSS
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.775393° Long: -77.751356° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx), Buchanan channery loam (BxD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✔ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-140-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1. Salix nigra	25	✔	OBL
2. Lindera benzoin	25	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Pilea fontana	25	✔	FACW
2. Phalaris arundinacea	25	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-140-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-141-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776690° Long: -77.750957° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BxD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A perennial high water table, seasonal flooding, and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-141-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	40	✔	FACW
2. Phalaris arundinacea	40	✔	FACW
3. Alliaria petiolata	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-141-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/17/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-142-PEM
Investigator(s): LTZ, CML, AHE, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776542° Long: -77.749763° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BxD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-6

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal/perennial seeps and a seasonal high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-142-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	10		FACW
2. Poa sp.	20	✔	ND
3. Juncus effusus	20	✔	FACW
4. Carex sp.	5		75%
5. Ageratina sp.	5		ND
6. Ranunculus repens	20	✔	FAC
7. Microstegium vimineum	20	✔	FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-142-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	80	10YR4/4	10	C	M	Silt Loam	
			10YR4/6	10				
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-143-PEM
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778835° Long: -77.750846° Datum: WGS-84
Soil Map Unit Name: Lindside soils, Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is in the floodplain of two watercourses. The delineation follows low lying areas dominated by reed canarygrass.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes ✔ No _____ Depth (inches): 8
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Seasonal flooding, a perennial high water table, surface water runoff, and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-143-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	5		FACW
2. Phalaris arundinacea	65	✔	FACW
3. Euthamia graminifolia	10		FAC
4. Juncus tenuis	10		FAC
5. Carex sp.	10		75%
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-143-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5YR5/2	95	10YR4/6	5	C	M	Silt Loam	Water at 8 inches
4-16	2.5YR5/2	80	10YR4/6	20	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 7/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-138-143-UPL
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779145° Long: -77.751506° Datum: WGS-84
Soil Map Unit Name: Lindside soils (Lx) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-138-143-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	20	✔	ND
2. Rosa multiflora	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Apocynum cannabinum	5		FACU
2. Dipsacus fullonum	20	✔	FACU
3. Solidago sp.	20	✔	ND
4. Erigeron annuus	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-138-143-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-144-PEM
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777010° Long: -77.758086° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
The delineation follows low lying areas dominated by reed canarygrass.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A perennial high water table and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-144-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Packera aurea	10		FACW
2. Phalaris arundinacea	85	✔	FACW
3. Carex sp.	5		75%
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-144-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Silty Clay Loam	Water at 4 inches
6-16	10YR4/2	80	10YR3/6	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-144-UPL
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777204° Long: -77.758093° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-144-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	40	✔	ND
2. Apocynum cannabinum	5		FACU
3. Alliaria petiolata	5		FACU
4. Phalaris arundinacea	5		FACW
5. Cirsium discolor	25	✔	UPL
6. Securigera varia	5		ND
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 5©)			
1. Parthenocissus quinquefolia	15	✔	FACU
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-144-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 7/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-145-PEM
Investigator(s): LTZ, CML, JMM, DJW, SNW, GEM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777857° Long: -77.758245° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a PEM fringe of a POW system. Dark hydric soils and hydric vegetation is dominant.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-14

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-145-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	10		FACW
2. Phalaris arundinacea	30	✔	FACW
3. Typha latifolia	60	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-145-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR3/2	95	10YR4/4	5	C	M	Silt Loam	
14+							Rock	Rock below 14 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-145-POW
Investigator(s): LTZ, CML, JMM, DJW, SNW, GEM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777307° Long: -77.757916° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a man-made pond with surface water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-12
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-145-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	5	✔	OBL
2. Phalaris arundinacea	5	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-145-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-145-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 7/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-145-UPL
Investigator(s): LTZ, CML, JMM, DJW, SNW, GEM Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777307° Long: -77.757916° Datum: WGS-84
Soil Map Unit Name: Murrill channery silt loam (MuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-145-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	30	✔	ND
2. Trifolium repens	30	✔	FACU
3. Plantago lanceolata	15	✔	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-145-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/4	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-146-PEM
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778312° Long: -77.759202° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a PEM fringe of a POW system. Dark hydric soils and hydric vegetation is dominant.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-146-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2. Scirpus atrovirens	5		OBL
3. Typha latifolia	50	✔	OBL
4. Lysimachia nummularia	15		FACW
5. Mentha spicata	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-146-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR3/2	90	10YR3/6	10	C	M	Silty Clay Loam	
10-16	10YR5/2	80	10YR3/6	15	C	M	Silty Clay Loam	
			7.5YR3/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-146-POW
Investigator(s): LTZ, CML, JMM, DJW, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778596° Long: -77.759803° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a pond system with deep surface water and algae.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 8-24
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-146-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-146-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-146-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-147-PEM
Investigator(s): LTZ, DJW, CML, SNW, JMM, GEW Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat, Bowl Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778991° Long: -77.760962° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB), Dunning silt loam (Du), Millheim silt loam (MnC) NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-147-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	45	✔	OBL
2. Phalaris arundinacea	25	✔	FACW
3. Scirpus atrovirens	10		OBL
4. Carex sp.	10		75%
5. Impatiens capensis	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. 75% FAC-OBL

SOIL Sampling Point: WL-LTZ-147-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	90	10YR3/6	10	C	M	Silt Loam	Water at 2 inches
8-16	10YR3/1	90	10YR3/6	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-146-147 UPL
Investigator(s): LTZ, DJW. CML, JMM, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778221° Long: -77.759287° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-146-147 UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rubus sp.	5		ND
2. Rosa multiflora	15	✔	FACU
3. Lonicera tatarica	15	✔	FACU
4. Morus alba	5		UPL
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	15	✔	ND
2. Trifolium repens	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 5©)			
1. Vitis sp.	5	✔	ND
2. Parthenocissus quinquefolia	10	✔	FACU
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-146-147 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/3	100					Silt Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-148-PEM
Investigator(s): LTZ, BPH, CML, JMM, DJW, GEM, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777786° Long: -77.767700° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB), Buchanan channery loam (BuB), Andover very stony loam (AoB) NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows dense hydrophytes and hydric vegetation that contrasts from surrounding uplands. Surface water is present and seeps are providing hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-148-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Juncus effusus	20	✔	FACW
2. Euthamia graminifolia	5		FAC
3. Carex sp.	10		75%
4. Scirpus atrovirens	5		OBL
5. Phalaris arundinacea	5		FACW
6. Typha latifolia	15		OBL
7. Leersia oryzoides	5		OBL
8. Onoclea sensibilis	10		FACW
9. Vernonia noveboracensis	20	✔	FACW
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-148-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	80	5YR3/4	20	C	M	Silty Clay Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-148-PSS
Investigator(s): LTZ, BPH, CML, JMM, DJW, GEM, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776766° Long: -77.767763° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB), Andover very stony loam (AoB) NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows dense hydrophytes and hydric vegetation that contrasts from surrounding uplands. Surface water is present and seeps are providing hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-148-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2. Elaeagnus umbellata	15		NS
3. Sambucus nigra	10		FACW
4. Alnus sp.	5		75%
5.			
6.			
7.			
8.			
9.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Alnus sp. - 75% FAC-OBL

NS - No Status

SOIL

Sampling Point: WL-LTZ-148-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	90	7.5YR3/4	10	C	M	Silt Loam	Water at 2 inches
10+							Rock	Rock below 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-148-POW
Investigator(s): LTZ, BPH, CML, JMM, DJW, GEM, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777597° Long: -77.768278° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a pond bound entirely by a concrete wall.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 24+
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-148-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-148-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soils are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-148-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 7/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-149-PEM
Investigator(s): LTZ, BPH, CML, JNS, DJW, ASH, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776431° Long: -77.769051° Datum: WGS-84
Soil Map Unit Name: Dunning silty clay loam (Du) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows dense hydrophytes and hydric vegetation that contrasts from surrounding uplands.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-6

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-149-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Ranunculus repens	40	✔	FAC
2. Mentha spicata	20	✔	FACW
3. Carex vulpinoidea	20	✔	OBL
4. Poa sp.	20	✔	ND
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-149-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	90	10YR3/6	10	C	M	Silt Loam	
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-150-PEM
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.776982° Long: -77.769180° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Delineation follows dense hydrophytes surrounding a man-made pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-150-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	70	✔	OBL
2. Impatiens capensis	15		FACW
3. Solidago sp.	15		ND
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-150-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	95	10YR3/6	5	C	M	Silt Loam	Water at 0 inches
6+							Compacted Gravel	Compacted gravel below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-150-POW
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777035° Long: -77.768983° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Delineation follows a man-made pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2-48+
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-150-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	10	✔	OBL
2. Impatiens capensis	2.5		FACW
3. Lemna minor	2.5		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation only around fringe.

SOIL

Sampling Point: WL-LTZ-150-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	95	10YR3/6	5	C	M	Silt Loam	Water at 0 inches
6+							Compacted Gravel	Compacted gravel below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-151-PEM
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7774309° Long: -77.769407° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Delineation follows dense hydrophytes surrounding a man-made pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-6

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-151-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	35	✔	OBL
2. Carex lurida	25	✔	OBL
3. Mentha spicata	5		FACW
4. Impatiens capensis	25	✔	FACW
5. Solidago sp.	10		ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-151-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	95	7.5YR4/4	5	C	M	Silt Loam	Water at 0 inches
6+							Compacted Gravel	Compacted gravel below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-151-POW
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777456° Long: -77.769172° Datum: WGS-84
Soil Map Unit Name: Water (W) NWI classification: PUBHx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Delineation follows dense hydrophytes surrounding a man-made pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 2-48+
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-151-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	20	✔	OBL
2. Carex lurida	20	✔	OBL
3. Mentha spicata	10	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation only around fringe.

SOIL

Sampling Point: WL-LTZ-151-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	95	7.5YR4/4	5	C	M	Silt Loam	Water at 0 inches
6+							Compacted Gravel	Compacted gravel below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-152-PEM
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778104° Long: -77.769301° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam, 3 to 8 percent slopes (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is located in a depressional area surrounded by a concrete wall. It includes a well-defined drainage pattern that drains to WL-LTZ-152-POW. Delineation follows microtopography, hydrophytes, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial seeps provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-152-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	25	✔	OBL
2. Impatiens capensis	25	✔	FACW
3. Phalaris arudinacea	10		FACW
4. Microstegium vimineum	20	✔	FAC
5. Leersia oryzoides	20	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-152-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/1	100					Silt Loam	
12+							Rock	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-152-POW
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778370° Long: -77.769440° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Delineation follows a concrete lined pond with 2-3 feet of surface water.
Wetland is located in a depressional area surrounded by a concrete wall. It includes a well-defined drainage pattern that drains to WL-LTZ-152-POW. Delineation follows microtopography, hydrophytes, and hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 24-36+
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and a perennial high water table provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-152-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	5	✔	OBL
2. Phalaris arundinacea	5	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-152-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
*								*See below

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

These soil are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-152-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/19/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-153-PEM
Investigator(s): LTZ, BPH, CML, JNS, DJW, GEW, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.778667° Long: -77.769344° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located in a depressional area in what appears to have been a previous pond. Delineation followed lower microtopography, hydrophytes, and hydric mucky soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-2
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and perennial seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-153-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Typha latifolia	50	✔	OBL
2. Impatiens capensis	20	✔	FACW
3. Leersia oryzoides	20	✔	OBL
4. Scirpus atrovirens	10		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-153-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Silt Loam	Water at 2 inches
6+							Rock	Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/18/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-148-153-UPL
Investigator(s): LTZ, BPH, CML, JMM, DJW, GEM, AHE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.777373° Long: -77.768555° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-148-153-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rubus sp.	20	✔	ND
2. Elaeagnus umbellata	20	✔	NS
3. Berberis thunbergii	10	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Solidago sp.	20	✔	ND
2. Cirsium discolor	5		UPL
3. Dipsacus fullonum	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 5©)			
1. Parthenocissus quinquefolia	20	✔	FACU
2.			
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined
NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-148-153-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-154-PEM
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783154° Long: -77.722354° Datum: WGS-84
Soil Map Unit Name: Andover very stony loam (AoC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench of S-LTZ-079. It receives direct hydrology from the channel and has surface water and a pocket of hydric vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-154-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	25	✔	FACW
2. Carex lurida	25	✔	OBL
3. Onoclea sensibilis	15		FACW
4. Microstegium vimineum	25	✔	FAC
5. Spagnum sp.	10		ND
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-154-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	95	10YR4/4	5	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-155-PEM
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784472° Long: -77.725078° Datum: WGS-84
Soil Map Unit Name: Hagerstown silt loam (HaB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. It receives direct hydrology from the channel and has surface water and a pocket of hydric vegetation. Drainage patterns through the wetland are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-<1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-155-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Carex lurida	20	✔	OBL
3. Rumex crispus	10		FAC
4. Microstegium vimineum	20	✔	FAC
5. Ranunculus repens	10		FAC
6. Euthamia graminifolia	10		FAC
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-155-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	80	10YR4/6	20	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✔ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-156-PEM
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784522° Long: -77.724891° Datum: WGS-84
Soil Map Unit Name: Hagerstown silt loam (HaB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a floodplain bench. It receives direct hydrology from the channel and has surface water and a pocket of hydric vegetation. Drainage patterns through the wetland are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-<1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-156-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Carex lurida	10		OBL
3. Phalaris arundinacea	30	✔	FACW
4. Euthamia graminifolia	10		FAC
5. Carex vulpinoidea	20	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-156-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR3/2	80	10YR4/6	20	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✔ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-154-156-UPL
Investigator(s): LTZ, CML, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784234° Long: -77.723570° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-154-156-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2. Tsuga canadensis	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	15	✔	FACU
2. Elaeagnus umbellata	5		ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5©)			
1. Cirsium discolor	15	✔	UPL
2. Alliaria petiolata	15	✔	FACU
3. Phytolacca americana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-154-156-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/6	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-157-PEM
Investigator(s): LTZ, BPH, CML, AHE, SS, SA Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784617° Long: -77.733001° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located in a low-lying valley area within a floodplain. The delineation followed hydrophytes and hydric soils corresponding with lower saturated areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-157-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cephalanthus occidentalis	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Solidago gigantea	40	✔	FACW
2. Juncus tenuis	15		FAC
3. Phalaris arundinacea	40	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-157-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/1	95	10YR4/3	5	C	M	Silt Loam	
14-16	10YR4/2	90	10YR5/4	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-157-PSS
Investigator(s): LTZ, BPH, CML, AHE, SS, SA Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784713° Long: -77.735361° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is located in a low-lying valley area within a floodplain. The delineation followed hydrophytes and hydric soils corresponding with lower saturated areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-2
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-157-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cephalanthus occidentalis	25	✔	OBL
2. Cornus amomum	25	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Solidago gigantea	40	✔	FACW
2. Juncus tenuis	20	✔	FAC
3. Phalaris arundinacea	40	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-157-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/1	95	10YR4/3	5	C	M	Silt Loam	
14-16	10YR4/2	90	10YR5/4	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-157-PFO
Investigator(s): LTZ, BPH, CML, AHE, SS, SA Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 8
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784178° Long: -77.731274° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam, 0 to 3 percent slopes (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Wetland is located in a low-lying valley area within a floodplain. The delineation followed hydrophytes and hydric soils corresponding with lower saturated areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-4
Water Table Present? Yes ✔ No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-157-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Persicaria maculosa	20	✔	FACW
3. Impatiens capensis	20	✔	FACW
4. Lysimachia nummularia	20	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-157-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/1	100					Silt Loam	Water at 0 inches
6-16	10YR4/1	80	10YR3/6	10	C	M	Silt Loam	
			10YR5/4	10	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-158-PEM
Investigator(s): LTZ, BPH, CML, AHE, SS, SA Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783388° Long: -77.731556° Datum: WGS-84
Soil Map Unit Name: Urban land-Hagerstown complex (URB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Wetland is a floodplain bench of a nearby watercourse.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-5

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-158-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Lysimachia nummularia	45	✔	FACW
2. Impatiens capensis	45	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 5©)			
1. Parthenocissus quinquefolia	10	✔	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-158-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/1	100					Silt Loam	
5+							Rock	Rock below 5 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-157-158 UPL
Investigator(s): LTZ, CML, AHE, BPH, SNW, ASH Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784428° Long: -77.729451° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-157-158 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10')			
1. Elaeagnus umbellata	15	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5©)			
1. Zea mays	30	✔	ND
2. Asclepias syriaca	10		FACU
3. Solidago altissima	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-157-158 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 7/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-159-PEM
Investigator(s): LTZ, CML, AHE, BPH, SS, SE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784864° Long: -77.736345° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway of Spring Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-159-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Impatiens capensis	10		FACW
3. Carex lurida	10		OBL
4. Carex vulpinoidea	2.5		OBL
5. Solidago sp.	10		ND
6. Lysimachia nummularia	2.5		FACW
7. Juncus effusus	5		FACW
8. Euthamia graminifolia	20	✔	FAC
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL

Sampling Point: WL-LTZ-159-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-159-PSS
Investigator(s): LTZ, CML, AHE, BPH, SS, SE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784701° Long: -77.736440° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway of Spring Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-159-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Salix nigra	50	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Impatiens capensis	10		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-159-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	90	10YR4/4	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/25/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-159-PFO
Investigator(s): LTZ, CML, AHE, BPH, SS, SE Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784803° Long: -77.737320° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkA) NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway of Spring Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✔ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-<1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff, seasonal seeps, and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-159-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Acer saccharinum	20	✔	FACW
3. Salix nigra	20	✔	OBL
4.			
5.			
6.			
7.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Solidago sp.	5		ND
3. Carex sp.	5		75%
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

Carex sp. 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-159-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/2	95	10YR4/4	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 07/26/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-159-UPL
Investigator(s): LTZ, BPH, CML, AHE, SE, SS Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785158° Long: -77.736696° Datum: WGS-84
Soil Map Unit Name: Hagerstown silty clay loam (HcC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-159-UPL

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10	✔	FACU
2. Acer saccharum	5		FACU
3. Quercus alba	15	✔	FACU
4. Quercus rubra	5		FACU
5. Robinia pseudoacacia	15	✔	FACU
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Rosa multiflora	10	✔	FACU
2. Rubus sp.	10	✔	ND
3. Lonicera tatarica	5	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum (Plot size: 5©)			
1. Poa sp.	5	✔	ND
2. Zea mays	20	✔	ND
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-159-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-160-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779774° Long: -77.732290° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Wetland is a low-lying area along a woodline. Delineation followed saturated hydric soils and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-4

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water and seasonal flooding provided the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-160-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	50	✔	FACW
2. Carex vulpinoidea	30	✔	OBL
3. Euthamia graminifolia	20		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-160-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	80	10YR4/4	20	C	M	Sandy Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-161-PEM
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.780148° Long: -77.732488° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔** **No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a low-lying area along a woodline. Delineation followed saturated hydric soils and hydrophytes.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-4

Wetland Hydrology Present? **Yes ✔** **No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-161-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	70	✔	FACW
2. Carex vulpinoidea	15		OBL
3. Euthamia graminifolia	15		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-161-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	80	10YR4/4	20	C	M	Sandy Loam	
4+							Rock	Rock below 4 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-160-161-UPL
Investigator(s): LTZ, BPH, AHE, JMM, JMH Section, Township, Range: Harris Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.779992° Long: -77.732370° Datum: WGS-84
Soil Map Unit Name: Buchanan channery loam (BuC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-160-161-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	25	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	60	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 10©)			
1. Lonicera japonica	5	✔	FAC
2. Parthenocissus quinquefolia	10	✔	FACU
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-160-161-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR2/2	100					Loam	
2-6	10YR5/4	100					Loam	
6+								Rock below 6 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-162-PEM
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786159° Long: -77.685279° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, a perennial high water table, surface water runoff, and seasonal flooding from S-LTZ-031-PER provide the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-162-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	✔	FACW
2. Carex lurida	15		OBL
3. Onoclea sensibilis	15		FACW
4. Impatiens capensis	5		FACW
5. Typha latifolia	25	✔	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-162-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	GLEY1 5/10Y	80	7.5YR4/6	20	C	M	Clay Loam	Water at 2 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-162-PSS
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786213° Long: -77.685080° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1
Water Table Present? Yes ✔ No _____ Depth (inches): 2
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps, surface water runoff, a perennial high water table, and seasonal flooding from S-LTZ-031-PER provide the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-162-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Cornus amomum	50	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Carex lurida	5		OBL
3. Impatiens capensis	15	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-162-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	80	10YR3/1	10	D	M	Silty Clay Loam	Water at 2 inches
			2.5YR5/2	10	D	M		
6-16	10YR3/2	75	2.5YR5/2	15	D	M	Silty Clay Loam	
			7.5YR4/6	10	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-163-PEM
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10
Subregion (LRR or MLRA): MLRA 147 Lat: 40.787683° Long: -77.679574° Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1-4
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and a perennial high water table provide the source of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-163-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	40	✔	FACW
2. Impatiens capensis	25	✔	FACW
3. Carex lurida	15		OBL
4. Persicaria sagittata	10		OBL
5. Rumex crispus	5		FAC
6. Mentha spicata	5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-163-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					Silty Clay Loam	Water at 0 inches
4-16	GLEY1 3/10Y	85	5YR3/4	15	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-163-UPL
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.788040° Long: -77.679675°, Datum: WGS-84
Soil Map Unit Name: Ernest channery silt loam (ErB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-163-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1. Poa sp.	50		ND
2. Rumex crispus	10		FAC
3. Trifolium repens	20	✔	FACU
4. Plantago major	20	✔	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-163-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR4/3	100					Loam	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-164-PEM
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.7855255° Long: -77.701172° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fed by hillslope seeps and possesses surface water and a well defined drainage pattern. The delineation follows a low-lying drainage with hydric soils and hydrophytic vegetation that differs from upland areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1-4
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-164-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	30	✔	FACW
2. Impatiens capensis	20	✔	FACW
3. Juncus effusus	10		FACW
4. Onoclea sensibilis	10		FACW
5. Typha latifolia	10		OBL
6. Carex sp.	20	✔	75%
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-164-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Silty Clay Loam	
4-8	10YR5/1	95	10YR6/8	5	C	M	Silty Clay Loam	
8-16	10YR5/1	50	10YR6/8	50	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-164-PSS
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.784753° Long: -77.701895° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fed by hillslope seeps and possesses surface water and a well defined drainage pattern. The delineation follows a low-lying drainage with hydric soils and hydrophytic vegetation that differs from upland areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 1-4
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-164-PSS

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	60	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	20	✔	FACW
2. Impatiens capensis	20	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test.

SOIL Sampling Point: WL-LTZ-164-PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Silty Clay Loam	
4-8	10YR5/1	95	10YR6/8	5	C	M	Silty Clay Loam	
8-16	10YR5/1	50	10YR6/8	50	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-164-PFO
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785284° Long: -77.702044° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

The wetland is fed by hillslope seeps and possesses surface water and a well defined drainage pattern. The delineation follows a low-lying drainage with hydric soils and hydrophytic vegetation that differs from upland areas.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ✔ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1-4
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal seeps provide hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-164-PFO

Tree Stratum (Plot size: 30©)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	✔	FAC
2. Quercus alba	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 10©)			
1. Elaeagnus umbellata	5	✔	NS
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5©)			
1. Phalaris arundinacea	10		FACW
2. Impatiens capensis	10		FACW
3. Microstegium vimineum	20	✔	FAC
4. Carex sp.	10		75%
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test.

SOIL Sampling Point: WL-LTZ-164-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100					Silty Clay Loam	
4-8	10YR5/1	95	10YR6/8	5	C	M	Silty Clay Loam	
8-16	10YR5/1	50	10YR6/8	50	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-165-PEM
Investigator(s): LTZ, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.786441° Long: -77.701757° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Seasonal or perennial spring upwelling from field and fueling wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 0-1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal seeps and surface water run off provide the sources of hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-165-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cyperus esculentus	15	✔	FACW
2. Phalaris arundinacea	15	✔	FACW
3. Poa spp.	35	✔	ND
4. Persicaria pensylvanica	15	✔	FACW
5. Trifolium pratense	5		FACU
6. Persicaria hydropiper	15	✔	OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified down to species level or without a wetland status are not included in the Dominance Test.

SOIL Sampling Point: WL-LTZ-165-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	95	10YR4/6	5	C	M	Silt Loam	
6-10	10YR5/2	90	10YR4/6	10	C	M	Silty Clay Loam	
10-16	10YR5/3	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/11/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-166-PEM
Investigator(s): LTZ, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.788002° Long: -77.699289° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is a floodplain bench.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-166-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Juncus effusus	20	✔	FACW
2. Phalaris arundinacea	20	✔	FACW
3. Leersia oryzoides	40	✔	OBL
4. Persicaria hydropiper	10		OBL
5. Persicaria pensylvanica	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-166-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/2	95	10YR4/6	5	C	M	Silty Clay Loam	
12-16	10YR4/3	98	10YR4/6	2	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/01/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-164-166-UPL
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.785829° Long: -77.702152° Datum: WGS-84
Soil Map Unit Name: Andover channery silt loam (AnB) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-164-166-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5)			
1. Poa sp.	60		ND
2. Plantago major	20	✔	FACU
3. Trifolium repens	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-164-166-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 09/06/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-167-PEM
Investigator(s): LTZ, BPH, DJW, SNW Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.795197° Long: -77.675469° Datum: WGS-84
Soil Map Unit Name: Clarksburg silt loam (CkB), Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Access to this wetland was restricted. Wetland was identified via aerial imagery and photographs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal flooding provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-167-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: - (A)

Total Number of Dominant Species Across All Strata: - (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: - (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Access to wetland was restricted and wetland was drawn in via aerial imagery and photographs.

SOIL Sampling Point: WL-LTZ-167-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Access to wetland was restricted and wetland was drawn in via aerial imagery and photographs.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/13/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-169-PEM
Investigator(s): LTZ, ARL, MKD Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): None Slope (%): 5
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797448° Long: -77.642839° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Located in a roadside ditch landscape position; however, appears to receive groundwater hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 1
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-8

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-169-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex spp.	25	✔	75%
2. Poa spp.	25	✔	ND
3. Eleocharis montevidensis	20	✔	FACW
4. Lysimachia nummularia	15		FACW
5. Ranunculus repens	15		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

*Plants not identified to species level were not included in the Dominance Test

SOIL Sampling Point: WL-LTZ-169-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR5/2	90	10YR4/4	10	C	M	Silty Clay Loam	
8+							Rock	Rock below 8 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/13/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-169-UPL
Investigator(s): LTZ, AHE Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.797270° Long: -77.642736° Datum: WGS-84
Soil Map Unit Name: Edom silt loam (EdC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-169-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 0©)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5)			
1. Poa sp.	40		ND
2. Plantago major	20	✔	FACU
3. Trifolium repens	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-169-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR4/3	100					Loam	Rock below 12 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-170-PEM
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782686° Long: -77.697107° Datum: WGS-84
Soil Map Unit Name: Laidig channery silt loam (LaC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water runoff and seasonal flooding provide the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-170-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	50	✔	FACW
2. Carex sp.	50	✔	75%
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Carex sp. - 75% FAC-OBL

SOIL

Sampling Point: WL-LTZ-170-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/2	80	10YR4/4	20	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-171-PEM
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.782663° Long: -77.703022° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkD) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is the headwaters of S-LTZ-091.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0-7

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water runoff and seasonal seeps provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-171-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Scirpus atrovirens	70	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-171-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR4/2	90	10YR4/4	5	C	M	Silt Loam	
			10YR4/6	5	C	M		
7+							Rock	Rock at 7 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-172-PEM
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783175° Long: -77.703300° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Wetland is in the floodway and floodplain of S-LTZ-091

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0-1
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal flooding and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-172-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	30	✔	FACW
2. Scirpus atrovirens	10		OBL
3. Phalaris arundinacea	60	✔	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: WL-LTZ-172-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR4/2	90	10YR4/4	10	C	M	Silt Loam	
10-16	10YR4/3	98	10YR4/4	2	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/07/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-170-172-UPL
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.783220° Long: -77.703558° Datum: WGS-84
Soil Map Unit Name: Berks channery silt loam (BkC) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): -
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-170-172-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0©)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5)			
1. Poa sp.	30		ND
2. Plantago major	20	✔	FACU
3. Trifolium repens	20	✔	FACU
4. Solidago altissima	30	✔	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 10©)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

NS - No Status

*Plants not identified to species or ones that do not have a wetland indicator status were not included in the Dominance Test

SOIL

Sampling Point: WL-LTZ-170-172-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 8/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-173-PEM
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796928° Long: -77.644393° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm), Tyler silt loam (Ty) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Perennial seeps and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-173-PEM

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5©)			
1. Impatiens capensis	20	✔	FACW
2. Cyperus esculentus	5		FACW
3. Setaria pumila	5		FAC
4. Mentha spicata	20	✔	FACW
5. Sagittaria latifolia	20	✔	OBL
6. Typha latifolia	20	✔	OBL
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 5©)			
1. Solanum dulcamara	10	✔	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✔ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-173-PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR5/2	85	10YR4/4	15	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-173-POW
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796718° Long: -77.644657° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm), Tyler silt loam (Ty) NWI classification: PUBBh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:
Spring-fed pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 36+
Water Table Present? Yes _____ No ✔ Depth (inches): -
Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Perennial seeps and springs and surface water runoff provided the hydrology to the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-173-POW

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-LTZ-173-POW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								*See below

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

These soil are inundated with standing water. Based upon a review of aerial photography, the inundated condition considered to be present for a long duration in accordance with the hydric soil description in the 1987 Wetland Delineation Manual. The presence of an inundated condition for a long duration is considered to satisfy the hydric soil parameter for the identification and delineation of WL-LTZ-173-POW.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: State College Area Connector City/County: Centre County Sampling Date: 08/14/2023
Applicant/Owner: PennDOT District 02 State: PA Sampling Point: WL-LTZ-173-UPL
Investigator(s): LTZ Section, Township, Range: Potter Township
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 147 Lat: 40.796520° Long: -77.644844° Datum: WGS-84
Soil Map Unit Name: Melvin silt loam (Mm) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): -
Water Table Present?	Yes _____	No ✔	Depth (inches): -
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): -

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WL-LTZ-173-UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 10')			
1. Rosa multiflora	15	✔	FACU
2. Rhus typhina	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5©)			
1. Trifolium repens	20	✔	FACU
2. Poa sp.	5		ND
3. Dipsacus fullonum	15	✔	FACU
4. Plantago major	5		FACU
5. Solidago altissima	15	✔	FACU
6. Parthenocissus quinquefolia	5		FACU
7. Taraxacum officinale	5		FACU
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined

SOIL Sampling Point: WL-LTZ-173-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR5/3	100					Silty Clay Loam	
10+							Rock	Rock at 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

APPENDIX C – WETLAND RAPID AND FUNCTIONAL ASSESSMENT DATA FORMS

WETLAND RAPID ASSESSMENT SUMMARY TABLE

Wetland	RAP Score	Wetland	RAP Score	Wetland	RAP Score
WL-BPH-001	0.74	WL-CML-017	0.82	WL-LTZ-029	0.63
WL-BPH-002	0.72	WL-CML-017-POW	0.77	WL-LTZ-030	0.79
WL-BPH-002-POW	0.70	WL-CML-018	0.79	WL-LTZ-031	0.80
WL-BPH-003	0.75	WL-CML-019	0.87	WL-LTZ-032	0.78
WL-BPH-004	0.83	WL-CML-020	0.77	WL-LTZ-033	0.75
WL-BPH-005	0.63	WL-DJW-001	0.85	WL-LTZ-034	0.82
WL-BPH-006	0.71	WL-DJW-002	0.89	WL-LTZ-035	0.66
WL-BPH-007	0.72	WL-DJW-003	0.78	WL-LTZ-036	0.73
WL-BPH-008	0.78	WL-DJW-004	0.82	WL-LTZ-037	0.76
WL-BPH-009	0.83	WL-DJW-005	0.81	WL-LTZ-038	0.73
WL-BPH-010	0.83	WL-LTZ-001	0.73	WL-LTZ-039	0.71
WL-BPH-011	0.82	WL-LTZ-002	0.84	WL-LTZ-040	0.73
WL-BPH-012	0.70	WL-LTZ-003	0.85	WL-LTZ-041	0.84
WL-BPH-013	0.82	WL-LTZ-004	0.69	WL-LTZ-042	0.87
WL-BPH-014	0.81	WL-LTZ-005	0.67	WL-LTZ-043	0.65
WL-BPH-015	0.78	WL-LTZ-006	0.78	WL-LTZ-043-POW	0.76
WL-BPH-016	0.81	WL-LTZ-007	0.75	WL-LTZ-044-POW	0.76
WL-BPH-017	0.76	WL-LTZ-008	0.72	WL-LTZ-045	0.64
WL-BPH-018	0.77	WL-LTZ-008-POW	0.74	WL-LTZ-046	0.62
WL-BPH-019	0.76	WL-LTZ-009	0.76	WL-LTZ-047	0.62
WL-BPH-020	0.78	WL-LTZ-010	0.73	WL-LTZ-047-POW	0.63
WL-BPH-021	0.60	WL-LTZ-011	0.70	WL-LTZ-048	0.69
WL-BPH-022	0.84	WL-LTZ-011-POW	0.72	WL-LTZ-049	0.63
WL-BPH-023	0.86	WL-LTZ-012	0.86	WL-LTZ-049-POW	0.79
WL-BPH-024	0.86	WL-LTZ-013	0.83	WL-LTZ-050	0.67
WL-BPH-025	0.64	WL-LTZ-014	0.88	WL-LTZ-051	0.72
WL-CML-001	0.75	WL-LTZ-015	0.84	WL-LTZ-052	0.64
WL-CML-001-POW	0.81	WL-LTZ-016	0.79	WL-LTZ-053	0.73
WL-CML-002	0.79	WL-LTZ-017	0.86	WL-LTZ-053-POW	0.78
WL-CML-003	0.83	WL-LTZ-018	0.86	WL-LTZ-054	0.68
WL-CML-004	0.75	WL-LTZ-019	0.85	WL-LTZ-054-POW	0.77
WL-CML-005	0.75	WL-LTZ-020	0.78	WL-LTZ-055	0.76
WL-CML-006	0.74	WL-LTZ-021	0.72	WL-LTZ-056	0.73
WL-CML-007	0.77	WL-LTZ-022	0.72	WL-LTZ-057	0.73
WL-CML-008	0.77	WL-LTZ-022-POW	0.74	WL-LTZ-058	0.66
WL-CML-009	0.79	WL-LTZ-023	0.74	WL-LTZ-059	0.70
WL-CML-010	0.82	WL-LTZ-023-POW	0.74	WL-LTZ-060/061-POW	0.69
WL-CML-011	0.72	WL-LTZ-024	0.61	WL-LTZ-062	0.70
WL-CML-012	0.74	WL-LTZ-025	0.61	WL-LTZ-063-POW	0.71
WL-CML-013	0.78	WL-LTZ-026	0.71	WL-LTZ-064	0.70
WL-CML-014	0.77	WL-LTZ-027	0.74	WL-LTZ-065	0.67
WL-CML-015	0.77	WL-LTZ-028	0.77	WL-LTZ-066-POW	0.69
WL-CML-016	0.77	WL-LTZ-028-POW	0.73	WL-LTZ-067	0.66

Wetland	RAP Score	Wetland	RAP Score	Wetland	RAP Score
WL-LTZ-068	0.70	WL-LTZ-112	0.83	WL-LTZ-152-POW	0.75
WL-LTZ-069	0.68	WL-LTZ-113	0.87	WL-LTZ-153	0.82
WL-LTZ-070	0.72	WL-LTZ-114	0.87	WL-LTZ-154	0.83
WL-LTZ-070-POW	0.73	WL-LTZ-116	0.84	WL-LTZ-155	0.77
WL-LTZ-071	0.79	WL-LTZ-116	0.79	WL-LTZ-156	0.77
WL-LTZ-073	0.66	WL-LTZ-116-POW	0.71	WL-LTZ-157	0.69
WL-LTZ-074	0.84	WL-LTZ-117	0.86	WL-LTZ-158	0.82
WL-LTZ-075-POW	0.84	WL-LTZ-118	0.91	WL-LTZ-159	0.70
WL-LTZ-076	0.84	WL-LTZ-119-POW	0.76	WL-LTZ-160	0.76
WL-LTZ-077	0.84	WL-LTZ-120	0.76	WL-LTZ-161	0.75
WL-LTZ-078	0.86	WL-LTZ-121-POW	0.73	WL-LTZ-162	0.70
WL-LTZ-079	0.65	WL-LTZ-122	0.77	WL-LTZ-163	0.66
WL-LTZ-080	0.72	WL-LTZ-123	0.77	WL-LTZ-164	0.78
WL-LTZ-081	0.70	WL-LTZ-124	0.79	WL-LTZ-165	0.77
WL-LTZ-082	0.71	WL-LTZ-125-POW	0.71	WL-LTZ-166	0.72
WL-LTZ-082-POW	0.71	WL-LTZ-126-POW	0.71	WL-LTZ-167	N/A
WL-LTZ-083	0.71	WL-LTZ-127	0.75	WL-LTZ-169	0.71
WL-LTZ-084	0.72	WL-LTZ-128	0.82	WL-LTZ-170	0.84
WL-LTZ-085	0.79	WL-LTZ-129	0.77	WL-LTZ-171	0.87
WL-LTZ-086	0.82	WL-LTZ-130	0.71	WL-LTZ-172	0.76
WL-LTZ-087	0.73	WL-LTZ-131	0.67	WL-LTZ-173	0.79
WL-LTZ-088	0.72	WL-LTZ-132	0.65	WL-LTZ-173-POW	0.81
WL-LTZ-089	0.78	WL-LTZ-133	0.87		
WL-LTZ-090	0.92	WL-LTZ-134	0.80		
WL-LTZ-091	0.79	WL-LTZ-135	0.83		
WL-LTZ-092	0.78	WL-LTZ-136	0.80		
WL-LTZ-092-POW	0.75	WL-LTZ-137-POW	0.71		
WL-LTZ-093	0.78	WL-LTZ-138	0.76		
WL-LTZ-094	0.86	WL-LTZ-139	0.82		
WL-LTZ-095	0.79	WL-LTZ-140	0.75		
WL-LTZ-096	0.84	WL-LTZ-141	0.78		
WL-LTZ-097	0.84	WL-LTZ-142	0.79		
WL-LTZ-098	0.77	WL-LTZ-143	0.67		
WL-LTZ-099	0.82	WL-LTZ-144	0.75		
WL-LTZ-100	0.83	WL-LTZ-145	0.74		
WL-LTZ-101	0.83	WL-LTZ-145-POW	0.70		
WL-LTZ-102	0.82	WL-LTZ-146	0.85		
WL-LTZ-103-POW	0.66	WL-LTZ-146-POW	0.73		
WL-LTZ-104	0.74	WL-LTZ-147	0.63		
WL-LTZ-105	0.83	WL-LTZ-148	0.70		
WL-LTZ-106	0.85	WL-LTZ-148-POW	0.83		
WL-LTZ-107	0.83	WL-LTZ-149	0.82		
WL-LTZ-108	0.73	WL-LTZ-150-POW	0.78		
WL-LTZ-109	0.72	WL-LTZ-151-POW	0.77		
WL-LTZ-110	0.82	WL-LTZ-152	0.74		

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793986°	-77.650756°	WL-BPH-001

General Comments: The source of hydrology of WL-BPH-001 is a depressional wetland located adjacent to a farm lane within a gravel spoil area.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	10%	50%	15%	10%	10%	**Total Score:**
	Score:	18	14	9	7	2	1	**0.41**
	Total Sub-score:	0.90	1.40	4.50	1.05	0.20	0.10	**8.15**

Comments: 1 = gravel spoil area; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Three farm lanes present within 100 feet of WL-BPH-001.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: Three farm lanes present within 300 feet of WL-BPH-001.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasives observed within the wetland.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Area underlain by compacted gravel.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

CI = Total Score/40: **0.90**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Excavation, microtopographic alterations (poor grading).

Score:	**14**

CI = Total Score/20: **0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	**19**

CI = Total Score/20: **0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Acidic drainage (gravel spoil area).

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	13	**32**

CI = Total Score/40: **0.80**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.74**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793458°	-77.645527°	WL-BPH-002-POW

General Comments: WL-BPH-002-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	10%	15%	20%	40%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	1.80	1.40	1.35	1.40	1.60	0.05	**7.60**

0.38

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-BPH-002-POW.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: One gravel road and one two-lane road present within 300 feet of WL-BPH-002-POW.

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass around fringe.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Agriculture along fringe.

a. Invasive Sub-Score:	15	**Total Score**
b. Vegetation Sub-Score:	17	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Pond (dredging/excavation, grading, dam).

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Algal mats.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	11	**Total Score:**
b. Contaminant Score	19	**30**

0.75

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792991°	-77.647604°	WL-BPH-002

General Comments: WL-BPH-002 is a large floodplain system with hillside seep component.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	10%	15%	20%	40%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	1.80	1.40	1.35	1.40	1.60	0.05	**7.60**

0.38

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane present within 100 feet of WL-BPH-002.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	18	* (0.67)	12
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	**17**

0.83

Comments: One farm land and one two-lane road present within 300 feet of WL-BPH-002.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Agriculture along fringe.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Runoff from ag. Fields

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.72**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792365°	-77.646862°	WL-BPH-003

General Comments: WL-BPH-003 is a depressional wetland adjacent to S-BPH-001-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	10%	20%	20%	10%	10%	**Total Score:**
	Score:	18	14	9	7	2	1	**0.52**
	Total Sub-score:	5.40	1.40	1.80	1.40	0.20	0.10	**10.30**

Comments: 1 = roads; 2= row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane present within 100 feet of WL-BPH-004.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	14	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: One farm land and one two-lane road present within 300 feet of WL-BPH-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species observed within the wetland.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Defunct pond, microtopographic alterations.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Sediment deposits, eroding bank/slope.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792869°	-77.646583°	WL-BPH-004

General Comments: WL-BPH-004 is a floodplain bench along S-BPH-001-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	5%	15%	15%	35%	5%	Total Score:
	Score:	18	14	9	7	2	1	
	Total Sub-score:	4.50	0.70	1.35	1.05	0.70	0.05	8.35

0.42

Comments: 1 = roads; 2= row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: No roads present within 100 feet of WL-BPH-004.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	17

CI = Total Score/20: **0.87**

Comments: One farm land and one two-lane road present within 300 feet of WL-BPH-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed within the wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795471°	-77.660777°	WL-BPH-005

General Comments: WL-BPH-005 is a mesic wetland located between two ag fields.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:				5%	95%		**Total Score:**	
	Score:				7	2			**0.11**
	Total Sub-score:	0.00	0.00	0.00	0.35	1.90	0.00	**2.25**	

Comments: 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-005.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-005.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Ag fields along wetland fringe; a portion of the wetland is in a grazed pasture.

a. Invasive Sub-Score:	1	**Total Score**
b. Vegetation Sub-Score:	14	**15**

0.38

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Ditching/dewatering, microtopographic alterations, culvert.

Score:	**13**

0.65

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Ag runoff.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Runoff from adjacent ag fields.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	14	**Total Score:**
b. Contaminant Score	19	**33**

0.83

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.63**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792321°	-77.659170°	WL-BPH-006

General Comments: WL-BPH-006 is a large floodplain wetland with PEM, PSS, and PFO components.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	10%	5%	30%	25%	5%	**Total Score:**
	Score:	18	14	7	4	2	1	
	Total Sub-score:	4.50	1.40	0.35	1.20	0.50	0.05	**8.00**

0.40

Comments: 1 = roads; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road and one driveway present within 100 feet of WL-BPH-006.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: One 2-lane road and one driveway present within 300 feet of WL-BPH-006.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Tatarian honeysuckle.

	Condition Category																				CI = Total Score/40
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Mowing along fringe.

a. Invasive Sub-Score:	4	**Total Score**	**0.53**
b. Vegetation Sub-Score:	17	**21**	

4. Hydrologic Modification Index

	Condition Category																				
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					CI = Total Score/20
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: Culvert

Score:	**17**	

5. Sediment Stressor Index

	Condition Category																				
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					CI = Total Score/20
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: Sediment deposits.

Score:	**17**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																				
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					CI = Total Score/40
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793089°	-77.642519°	WL-BPH-007

General Comments: WL-BPH-007 is a small floodplain bench along S-LTZ-006-PER

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	20%	15%	10%		10%	**Total Score:**	**0.62**
	Score:	18	14	7	4		1		
	Total Sub-score:	8.10	2.80	1.05	0.40	0.00	0.10	**12.45**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road and two driveways present within 100 feet of WL-BPH-007.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	13	* (0.33)	4	**0.68**
		Total Score:	**14**	

Comments: Two gravel roads and two driveways present within 300 feet of WL-BPH-007.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Culvert, berm along gravel road.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks/slopes.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797225°	-77.667206°	WL-BPH-008

General Comments: WL-BPH-008 is a small floodplain bench in Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	15%	5%	5%	10%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	9.00	2.10	0.45	0.35	0.40	0.15	**12.45**

0.62

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-BPH-008.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	13	* (0.33)	4
		Total Score:	**16**

0.78

Comments: One 2-lane road and two driveways/parking lots present within 300 feet of WL-BPH-008.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, autumn olive.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks, sediment deposits.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.798867°	-77.668965°	WL-BPH-009

General Comments: WL-BPH-009 is a small floodplain bench located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	20%	5%	5%	20%		**Total Score:**	**0.67**
	Score:	18	14	9	7	4			
	Total Sub-score:	9.00	2.80	0.45	0.35	0.80	0.00	**13.40**	

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One ATV lane present within 100 feet of WL-BPH-009.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	18	* (0.33)	6	**0.90**
		Total Score:	**18**	

Comments: One ATV lane present within 300 feet of WL-BPH-009.

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For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, multiflora rose.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	13	**Total Score**	**0.80**
b. Vegetation Sub-Score:	19	**32**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	**19**

CI = Total Score/20 **0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Eroding banks, sediment deposits.

Score:	**14**

CI = Total Score/20 **0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.798953°	-77.668617°	WL-BPH-010

General Comments: WL-BPH-010 is a floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	15%	5%	5%	30%		**Total Score:**
	Score:	18	14	9	7	4		**0.61**
	Total Sub-score:	8.10	2.10	0.45	0.35	1.20	0.00	**12.20**

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-010.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	18	* **(0.33)**	6	**0.93**
		Total Score:	**19**	

Comments: One ATV lane present within 300 feet of WL-BPH-010.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, multiflora rose.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**	**0.70**
b. Vegetation Sub-Score:	19	**28**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.95**

Comments: No hydrologic stressors observed.

Score:	**19**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.85**

Comments: Eroding slope.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No eutrophication stressors observed.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.798009°	-77.667610°	WL-BPH-011

General Comments: WL-BPH-011 is a floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	10%	5%	5%	30%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.58**
	Total Sub-score:	8.10	1.40	0.45	0.35	1.20	0.05	**11.55**

Comments: 1 = mowed areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-011.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	10	* **(0.33)**	3	**0.80**
		Total Score:	**16**	

Comments: One 2-lane road and four driveways/parking lots present within 300 feet of WL-BPH-011.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope, sediment deposits.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797442°	-77.667182°	WL-BPH-012

General Comments: WL-BPH-012 is a floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	5%	5%	40%	20%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	3.60	1.40	0.45	0.35	1.60	0.20	**7.60**

0.38

Comments: 1 = roads/buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One 2-lane road and one driveway present within 100 feet of WL-BPH-012.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	13	* (0.33)	4	**0.68**
		Total Score:	**14**	

Comments: One 2-lane road and two driveways/parking lots present within 300 feet of WL-BPH-012.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Multiflora rose.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Filling/grading for US 322.

Score:	17	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding slope, sediment deposits.

Score:	14	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782522°	-77.725236°	WL-BPH-013

General Comments: WL-BPH-013 is a headwater seep wetland adjacent to S-LTZ-062-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	20%	8%	10%	20%	2%	Total Score:
	Score:	18	14	9	7	4	1	0.61
	Total Sub-score:	7.20	2.80	0.72	0.70	0.80	0.02	12.24

Comments: 1 = roads/buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: No roads present within 100 feet of WL-BPH-013.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	18	* (0.33)	6	0.93
		Total Score:	19	

Comments: One driveway present within 300 feet of WL-BPH-013.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.				**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.	**High Marginal:** >20% but less than 30% of the total AA contains invasive species.				**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Multiflora rose, Autumn olive.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.				**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.	**High Marginal:** Four vegetation stressors present within the AA boundary.				**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Brush clearing.

a. Invasive Sub-Score:	8	**Total Score**	**0.63**
b. Vegetation Sub-Score:	17	**25**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.				**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.	**High Marginal:** Four hydrologic stressors present within the AA boundary.				**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: ATV tracks.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.				**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.	**High Marginal:** Four sediment stressors present within the AA boundary.				**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783992°	-77.724628°	WL-BPH-014

General Comments: WL-BPH-014 is a floodplain bench at the confluence of S-LTZ-058-PER and S-LTZ-054-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	30%			10%	10%	**Total Score:**	**0.69**
	Score:	18	14			4	1		
	Total Sub-score:	9.00	4.20	0.00	0.00	0.40	0.10	**13.70**	

Comments: 1 = roads/buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-014.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	15	* (0.33)	5	**0.88**
		Total Score:	**18**	

Comments: One 2-lane road present within 300 feet of WL-BPH-014.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	6	**Total Score**
b. Vegetation Sub-Score:	19	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations for pond construction.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.81**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782820°	-77.724205°	WL-BPH-015

General Comments: WL-BPH-015 is a floodplain system along S-LTZ-054-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	55%	30%	5%	5%	5%		**Total Score:**	**0.76**
	Score:	18	14	9	7	4			
	Total Sub-score:	9.90	4.20	0.45	0.35	0.20	0.00	**15.10**	

Comments: 1 = roads/buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-015.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-015.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Planted food plot, clear cutting.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	14	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations for food plot, ATV tracks.

Score:	**16**

0.80

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks, tilling for food plot.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782333°	-77.724143°	WL-BPH-016

General Comments: WL-BPH-016 is a small depressional wetland located along an old logging road.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							Total Score:	
Scoring:	% ZOI Area:	60%	30%	5%	5%				
	Score:	18	14	9	7				**0.79**
	Total Sub-score:	10.80	4.20	0.45	0.35	0.00	0.00	**15.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-016.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-016.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Clear cutting.

a. Invasive Sub-Score:	3	**Total Score**	**0.50**
b. Vegetation Sub-Score:	17	**20**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Microtopographic alterations, grading.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779634°	-77.732928°	WL-BPH-017

General Comments: WL-BPH-017 is a small floodplain bench along S-CML-009-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	20%		10%	25%	15%	**Total Score:**	
	Score:	18	14		9	4	1		**0.51**
	Total Sub-score:	5.40	2.80	0.00	0.90	1.00	0.15	**10.25**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-BPH-017.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	7	* (0.33)	2	**0.75**
		Total Score:	**15**	

Comments: One 2-lane road, one 1-lane road, and six driveways present within 300 feet of WL-BPH-017.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Grading.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779922°	-77.733008°	WL-BPH-018

General Comments: WL-BPH-018 is a small floodplain bench along S-CML-009-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	20%		10%	25%	15%	**Total Score:**	
	Score:	18	14		9	4	1		**0.51**
	Total Sub-score:	5.40	2.80	0.00	0.90	1.00	0.15	**10.25**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-018.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	7	* (0.33)	2	**0.75**
		Total Score:	**15**	

Comments: One 2-lane road, one 1-lane road, and six driveways present within 300 feet of WL-BPH-018.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	10	**Total Score**
b. Vegetation Sub-Score:	19	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780117°	-77.733027°	WL-BPH-019

General Comments: WL-BPH-019 is a small floodplain bench along S-CML-009-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	20%		10%	25%	15%	**Total Score:**	
	Score:	18	14		9	4	1		**0.51**
	Total Sub-score:	5.40	2.80	0.00	0.90	1.00	0.15	**10.25**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-019.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	7	* (0.33)	2	**0.75**
		Total Score:	**15**	

Comments: One 2-lane road, one 1-lane road, and six driveways present within 300 feet of WL-BPH-019.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.76

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781098°	-77.733360°	WL-BPH-020

General Comments: WL-BPH-020 is a floodplain bench along S-CML-009-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	20%	10%	5%	20%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	5.40	2.80	0.90	0.35	0.80	0.15	**10.40**

0.52

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-020.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	9	* (0.33)	3
		Total Score:	**16**

0.79

Comments: Two 2-lane roads, one 1-lane road, and two driveways present within 300 feet of WL-BPH-020.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781649°	-77.733374°	WL-BPH-021

General Comments: WL-BPH-021 is a floodplain bench along S-CML-009-PER; it likely has formed incidental to the construction of US 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	15%	10%	10%	5%	45%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	2.70	1.40	0.90	0.35	1.80	0.15	**7.30**

0.37

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 1-lane road and one 2-lane road present within 100 feet of WL-BPH-021.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.67**
		Total Score:	**13**	

Comments: Two 2-lane roads and one 1-lane roads present within 300 feet of WL-BPH-021.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Roadside mowing.

a. Invasive Sub-Score:	5	**Total Score**	**0.48**
b. Vegetation Sub-Score:	14	**19**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, excavation, US 322, stormwater inputs.

		0.45
Score:	**9**	

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

		0.85
Score:	**17**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Trash.

a. Eutrophication Score	19	**Total Score:**	**0.80**
b. Contaminant Score	13	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.60**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	09/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.788906°	-77.670623°	WL-BPH-022

General Comments: WL-BPH-022 is a small floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	75%	5%			20%		**Total Score:**	
	Score:	18	14			4			**0.75**
	Total Sub-score:	13.50	0.70	0.00	0.00	0.80	0.00	**15.00**	

Comments: 4 = grazed pasture.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-022.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-022.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	19	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	09/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.789258°	-77.670234°	WL-BPH-023

General Comments: WL-BPH-023 is a small floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	75%	10%			15%		**Total Score:**	**0.78**
	Score:	18	14			4			
	Total Sub-score:	13.50	1.40	0.00	0.00	0.60	0.00	**15.50**	

Comments: 4 = grazed pasture.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-023.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-023.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.86**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	09/06/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.789697°	-77.669469°	WL-BPH-024

General Comments: WL-BPH-024 is a small floodplain bench along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	80%	15%			5%		**Total Score:**	**0.84**
	Score:	18	14			4			
	Total Sub-score:	14.40	2.10	0.00	0.00	0.20	0.00	**16.70**	

Comments: 4 = grazed pasture.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-BPH-024.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-BPH-023.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	19	**0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Eroding bank.

Score:	17	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.86**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.778828°	-77.778555°	WL-BPH-025

General Comments: WL-BPH-025 is located adjacent to Boal Ave and S-CML-011-INT. The wetland formed in a depressional area that appears to have been part of an old septic system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	5%	5%	5%	60%	20%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.25**
	Total Sub-score:	0.90	0.70	0.45	0.35	2.40	0.20	**5.00**

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-BPH-025.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	2	* (0.33)	1	**0.57**
		Total Score:	**11**	

Comments: Three 2-lane roads and eight driveways present within 300 feet of WL-BPH-025.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Excavation, fill/grading, microtopographic alterations.

		0.60
Score:	**12**	

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank.

		0.85
Score:	**17**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Wetland appears to have been part of an old septic system.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Garbage/dumping.

a. Eutrophication Score	13	**Total Score:**	**0.65**
b. Contaminant Score	13	**26**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.64**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/13/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.784352°	-77.713799°	WL-CML-001- POW

General Comments: Pond

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	10%	5%	10%	40%	15%	**Total Score:**	**0.40**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	3.60	1.40	0.45	0.70	1.60	0.15	**7.90**	

Comments: 1 = buildings/roads, row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No road/driveway present within 100 feet.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	18	* (0.33)	6	**0.93**
		Total Score:	**19**	

Comments: One gravel road/driveway present within 300 feet.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: ditching, dredging.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/13/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.781894°	-77.713401°	WL-CML-001

General Comments: Hillside/headater seep

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	20%	10%	5%	15%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.64**
	Total Sub-score:	8.10	2.80	0.90	0.35	0.60	0.05	**12.80**

Comments: 1 = buildings/roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road/driveway present within 100 feet.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	18	* (0.33)	6	**0.90**
		Total Score:	**18**	

Comments: One gravel road/driveway present within 300 feet.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass, and Japanese barberry.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing, brush cutting, removal of woody debris.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	12	**15**

0.38

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: ditching, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments:

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.779011°	-77.732603°	WL-CML-002

General Comments: Wetland is a small floodplain bench of S-CML-009-PER

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	10%	10%	0%	20%	10%	Total Score:
	Score:	18	14	9	7	4	1	0.61
	Total Sub-score:	9.00	1.40	0.90	0.00	0.80	0.10	12.20

Comments: 1 = buildings/roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: One gravel road/driveway present within 100 feet.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	12	* (0.33)	4	0.80
		Total Score:	16	

Comments: 5 driveways present within 300 feet.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs (pipe).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.79

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780652°	-77.772134°	WL-CML-003

General Comments: Wetland is a small floodplain bench along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	30%	0%	10%	20%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.56**
	Total Sub-score:	5.40	4.20	0.00	0.70	0.80	0.10	**11.20**

Comments: 1 = buildings/roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	14	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: 2 driveways present within 300 feet.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stormwater inputs (stormwater conveyance).

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780418°	-77.777610°	WL-CML-004

General Comments: Wetland is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	15%		50%		15%	**Total Score:**	
	Score:	18	14		7		1		**0.47**
	Total Sub-score:	3.60	2.10	0.00	3.50	0.00	0.15	**9.35**	

Comments: 1 = buildings/roads, row crops

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One two-lane paved road present within 100 feet of WL-CML-004.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: One two-lane paved road present within 300 feet of WL-CML-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**	**0.58**
b. Vegetation Sub-Score:	19	**23**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stormwater inputs (stormwater conveyance).

Score:	**17**

CI = Total Score/20

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

Score:	**19**

CI = Total Score/20

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776982°	-77.777070°	WL-CML-005

General Comments: Wetland is a small floodplain bench along S-CML-011-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	15%	10%	5%	20%	20%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	5.40	2.10	0.90	0.35	0.80	0.20	**9.75**

0.49

Comments: 1 = buildings/roads, row crops, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One two-lane paved road present within 100 feet of WL-CML-004.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	7	* (0.33)	2	**0.58**
		Total Score:	**12**	

Comments: 2 two-lane paved roads, 2 one-lane paved roads, and 3 driveways/parking lots present within 300 feet of WL-CML-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stormwater inputs (stormwater conveyance).

Score:	**17**	**0.85**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777290°	-77.777119°	WL-CML-006

General Comments: Wetland is a small floodplain bench along S-CML-011-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	10%	5%	10%	25%	20%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.46**
	Total Sub-score:	5.40	1.40	0.45	0.70	1.00	0.20	**9.15**

Comments: 1 = buildings/roads, row crops, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One one-lane paved road present within 100 feet of WL-CML-004.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	7	* (0.33)	2	**0.69**
		Total Score:	**14**	

Comments: 2 two-lane paved roads, 2 one-lane paved roads, and 3 driveways/parking lots present within 300 feet of WL-CML-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass, multiflora rose.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777813°	-77.777355°	WL-CML-007

General Comments: Wetland is a small floodplain bench along S-CML-011-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%		5%	40%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.45**
	Total Sub-score:	5.40	1.40	0.00	0.35	1.60	0.15	**8.90**	

Comments: 1 = buildings/roads, row crops, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-CML-007.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	9	* (0.33)	3	**0.79**
		Total Score:	**16**	

Comments: 1 two-lane paved road, 3 one-lane paved roads, and 3 driveways/parking lots present within 300 feet of WL-CML-007.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	6	**Total Score**	**0.63**
b. Vegetation Sub-Score:	19	**25**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777766°	-77.777093°	WL-CML-008

General Comments: Wetland is a small floodplain bench along S-CML-011-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%		5%	40%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.45**
	Total Sub-score:	5.40	1.40	0.00	0.35	1.60	0.15	**8.90**	

Comments: 1 = buildings/roads, row crops, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-CML-008.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	9	* (0.33)	3	**0.79**
		Total Score:	**16**	

Comments: 1 two-lane paved road, 2 one-lane paved roads, and 4 driveways/parking lots present within 300 feet of WL-CML-008.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass, multiflora rose.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.77

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780443°	-77.764525°	WL-CML-009

General Comments: Wetland is a large floodplain system associated with Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%			15%	20%	25%	**Total Score:**	**0.47**
	Score:	18			7	4	1		
	Total Sub-score:	7.20	0.00	0.00	1.05	0.80	0.25	**9.30**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-CML-009.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	1	* (0.33)	0	**0.65**
		Total Score:	**13**	

Comments: 3 one-lane paved roads, and 12 driveways/parking lots/golf course cart path present within 300 feet of WL-CML-009.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stormwater inputs.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.775781°	-77.740381°	WL-CML-010

General Comments: Wetland is a small floodplain bench of S-LTZ-070-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	10%		20%	25%	5%	**Total Score:**	**0.55**
	Score:	18	14		7	4	1		
	Total Sub-score:	7.20	1.40	0.00	1.40	1.00	0.05	**11.05**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-010.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-CML-010.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776643°	-77.741222°	WL-CML-011

General Comments: Wetland is a small floodplain bench of S-LTZ-070-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	10%		20%	45%	5%	**Total Score:**	**0.41**
	Score:	18	14		7	4	1		
	Total Sub-score:	3.60	1.40	0.00	1.40	1.80	0.05	**8.25**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 2 farm lanes present within 100 feet of WL-CML-011.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: 1 gravel road, 2 farm lanes present within 300 feet of WL-CML-011.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Dredging.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits, turbidity.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777018°	-77.741503°	WL-CML-012

General Comments: Wetland is a small floodplain bench of S-LTZ-070-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	10%		25%	40%	5%	**Total Score:**	**0.42**
	Score:	18	14		7	4	1		
	Total Sub-score:	3.60	1.40	0.00	1.75	1.60	0.05	**8.40**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 2 farm lanes present within 100 feet of WL-CML-012.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: 1 gravel road, 2 farm lanes present within 300 feet of WL-CML-012.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	10	**Total Score**	**0.73**
b. Vegetation Sub-Score:	19	**29**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Dredging, dewatering.

Score:	**14**	**0.70**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits.

Score:	**17**	**0.85**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776427°	-77.74824°	WL-CML-013

General Comments: Wetland is a small floodplain bench of S-LTZ-073-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		50%	25%		**Total Score:**	**0.42**
	Score:	18	14		7	4			
	Total Sub-score:	1.80	2.10	0.00	3.50	1.00	0.00	**8.40**	

Comments: 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-013.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-CML-013.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Moderate livestock grazing.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	17	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations (cow tracks).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776234°	-77.748049°	WL-CML-014

General Comments: Wetland is a small floodplain bench of S-LTZ-073-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		50%	25%		**Total Score:**	**0.42**
	Score:	18	14		7	4			
	Total Sub-score:	1.80	2.10	0.00	3.50	1.00	0.00	**8.40**	

Comments: 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-014.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-CML-014.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Moderate livestock grazing.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	17	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Microtopographic alterations (cow tracks).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776377°	-77.748188°	WL-CML-015

General Comments: Wetland is a small floodplain bench of S-LTZ-073-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		50%	25%		**Total Score:**	**0.42**
	Score:	18	14		7	4			
	Total Sub-score:	1.80	2.10	0.00	3.50	1.00	0.00	**8.40**	

Comments: 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-CML-015.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-CML-015.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Moderate livestock grazing.

a. Invasive Sub-Score:	8	**Total Score**	**0.63**
b. Vegetation Sub-Score:	17	**25**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Microtopographic alterations (cow tracks).

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776508°	-77.748609°	WL-CML-016

General Comments: Wetland is a small floodplain bench of S-LTZ-073-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		50%	25%		**Total Score:**	**0.42**
	Score:	18	14		7	4			
	Total Sub-score:	1.80	2.10	0.00	3.50	1.00	0.00	**8.40**	

Comments: 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-016.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-CML-016.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Moderate livestock grazing.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	17	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations (cow tracks).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783990°	-77.725444°	WL-CML-017-POW

General Comments: Wetland is a pond system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	15%	10%		35%	10%	**Total Score:**	
	Score:	18	14	9		4	1		**0.50**
	Total Sub-score:	5.40	2.10	0.90	0.00	1.40	0.10	**9.90**	

Comments: 1 = roadways, 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 1 two-lane paved road present within 100 feet of WL-CML-017-POW.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: 1 two-lane paved road present within 300 feet of WL-CML-017-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	17	**Total Score**	**0.90**
b. Vegetation Sub-Score:	19	**36**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Pond (dredging, grading, excavation).

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783862°	-77.725205°	WL-CML-017

General Comments: Wetland is a small floodplain bench of S-LTZ-062-INT and along WL-CML-017-POW.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	10%	10%		40%	5%	**Total Score:**	**0.51**
	Score:	18	14	9		4	1		
	Total Sub-score:	6.30	1.40	0.90	0.00	1.60	0.05	**10.25**	

Comments: 1 = roadways, 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-017.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	16	* (0.33)	5	**0.90**
		Total Score:	**18**	

Comments: 1 two-lane paved road present within 300 feet of WL-CML-017.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors present.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.782992°	-77.725429°	WL-CML-018

General Comments: Wetland originates from a hillside seep and outflow from S-LTZ-062-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	10%	10%	15%	30%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.50**
	Total Sub-score:	5.40	1.40	0.90	1.05	1.20	0.05	**10.00**

Comments: 1 = buildings/roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-018.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-CML-018.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, multiflora rose, autumn olive.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	19	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Ditching/dewatering.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/26/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780143°	-77.770040°	WL-CML-019

General Comments: Wetland is a small floodplain bench along Gailbrath Gap Run (S-LTZ-077-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	30%			15%	5%	**Total Score:**	**0.69**
	Score:	18	14			4	1		
	Total Sub-score:	9.00	4.20	0.00	0.00	0.60	0.05	**13.85**	

Comments: 1 = buildings/roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-019.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-CML-019.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	13	**Total Score**	**0.80**
b. Vegetation Sub-Score:	19	**32**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors.

Score:	**19**	**0.95**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits.

Score:	**17**	**0.85**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.87**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/26/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.785015°	-77.737485°	WL-CML-020

General Comments: Wetland is a small floodplain bench along Spring Creek (S-LTZ-035-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	15%		10%		50%	**Total Score:**	**0.40**
	Score:	18	14		9		1		
	Total Sub-score:	4.50	2.10	0.00	0.90	0.00	0.50	**8.00**	

Comments: 1 = roadways/crops

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-CML-020.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One gravel road present within 300 feet of WL-CML-020.

Wetland Condition Assessment Form

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.77**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.778815°	-77.718266°	WL-DJW-001

General Comments: WL-DJW-001 is a hillside seep wetland that drains to S-DJW-001-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	70%	30%					**Total Score:**
	Score:	18	14					
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**

0.84

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-DJW-001.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	19	* (0.33)	6
		Total Score:	**19**

0.95

Comments: No roads present within 300 feet of WL-DJW-001.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	3	**Total Score**	**0.55**
b. Vegetation Sub-Score:	19	**22**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks/slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.85**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779022°	-77.719013°	WL-DJW-002

General Comments: WL-DJW-002 is a Depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-DJW-002.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-DJW-002.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	19	**31**

0.78

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.89**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778579°	-77.769676°	WL-DJW-003

General Comments: Wetland is a small floodplain bench of Gailbrath Gap Run (S-LTZ-077-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	10%	5%	10%	15%	20%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.53**
	Total Sub-score:	7.20	1.40	0.45	0.70	0.60	0.20	**10.55**

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway present within 100 feet of WL-DJW-003.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* **(0.67)**	11	
b. Roadbed 100-300:	9	* **(0.33)**	3	**0.72**
		Total Score:	**14**	

Comments: 1 two lane paved road, 1 single lane paved road, 1 gravel road, 3 driveways/parking lots present within 300 feet of WL-DJW-003.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.782910°	-77.724848°	WL-DJW-004

General Comments: Wetland is a small floodplain bench of S-LTZ-058-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	20%	5%	10%	15%		**Total Score:**	**0.68**
	Score:	18	14	9	7	4			
	Total Sub-score:	9.00	2.80	0.45	0.70	0.60	0.00	**13.55**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-DJW-004.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-DJW-004.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass, reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	9	**Total Score**	**0.70**
b. Vegetation Sub-Score:	19	**28**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/24/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783536°	-77.724771°	WL-DJW-005

General Comments: Wetland is a small floodplain bench of S-LTZ-058-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	15%		15%	20%		**Total Score:**	**0.65**
	Score:	18	14		7	4			
	Total Sub-score:	9.00	2.10	0.00	1.05	0.80	0.00	**12.95**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-DJW-004.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-DJW-004.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, Japanese barberry.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.81**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799340°	-77.642466°	WL-LTZ-001

General Comments: WL-LTZ-001 is a large floodplain system abutting Sinking Creek. This wetland is partially located within a mowed pasture.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%		10%	30%	5%	10%	**Total Score:**
	Score:	18		9	7	4	1	**0.57**
	Total Sub-score:	8.10	0.00	0.90	2.10	0.20	0.10	**11.40**

Comments: 4 = mowed areas; 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two 2-lane roads present within 100 feet of WL-LTZ-001.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.63**
		Total Score:	**13**	

Comments: Two 2-lane roads and one driveway present within 300 feet of WL-LTZ-001.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Autumn olive

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Wetland is partially mowed/grazed.

a. Invasive Sub-Score:	8	**Total Score**	**0.55**
b. Vegetation Sub-Score:	14	**22**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Presence of road (Mountain Back Road); ATV/tractor tracks.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799730°	-77.642634°	WL-LTZ-002

General Comments: WL-LTZ-002 is a large floodplain system abutting Sinking Creek (S-LTZ-001).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	70%		15%	5%		10%	**Total Score:**
	Score:	18		9	7		1	
	Total Sub-score:	12.60	0.00	1.35	0.35	0.00	0.10	**14.40**

0.72

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-LTZ-002.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	16	* (0.67)	11
b. Roadbed 100-300:	16	* (0.33)	5
		Total Score:	**16**

0.80

Comments: One 2-lane road present within 300 feet of WL-LTZ-002.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**	**0.78**
b. Vegetation Sub-Score:	19	**31**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Presence of road (Mountain Back Road).

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799225°	-77.643496°	WL-LTZ-003

General Comments: WL-LTZ-003 is a small floodplain bench system abutting Sinking Creek (S-LTZ-001).

1. Wetland Zone of Influence Condition Index

	Condition Category																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	70%		10%	10%		10%	**Total Score:**
	Score:	18		9	7		1	
	Total Sub-score:	12.60	0.00	0.90	0.70	0.00	0.10	**14.30**

0.72

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																		
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-LTZ-003.

	Condition Categories																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	16	* (0.67)	11
b. Roadbed 100-300:	16	* (0.33)	5
		Total Score:	**16**

0.80

Comments: One 2-lane road present within 300 feet of WL-LTZ-003.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasives observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Presence of road/bridge (Mountain Back Road).

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.85**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796551°	'-77.639063°	WL-LTZ-004

General Comments: A portion of WL-LTZ-004 is located in a grazed pasture in a drainage/valley.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	5%	10%			75%	10%	**Total Score:**	**0.27**
	Score:	18	14			4	1		
	Total Sub-score:	0.90	1.40	0.00	0.00	3.00	0.10	**5.40**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-004.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	13	* (0.33)	4	**0.85**
		Total Score:	**17**	

Comments: One 2-lane road and two driveways present within 300 feet of WL-LTZ-004.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing.

a. Invasive Sub-Score:	10	**Total Score**	**0.68**
b. Vegetation Sub-Score:	17	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs and microtopgraphic alterations.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.78**
b. Contaminant Score	18	**31**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.69**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795210°	' -77.643879°	WL-LTZ-005

General Comments: WL-LTZ-005 is almost entirely located in a highly disturbed, grazed horse pasture

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	5%	10%			70%	15%	**Total Score:**	
	Score:	18	14			4	1		**0.26**
	Total Sub-score:	0.90	1.40	0.00	0.00	2.80	0.15	**5.25**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road and two driveways present within 100 feet of WL-LTZ-005.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.63**
		Total Score:	**13**	

Comments: One 2-lane road and three driveways present within 300 feet of WL-LTZ-005.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs, microtopgraphic alterations, road (Mountain Back Rd).

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	18	**31**

0.78

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.67**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793512°	-77.638831°	WL-LTZ-006

General Comments: WL-LTZ-006 is located at the base of a valley in a "bowl-shaped" geomorphic position where water collects downgradient of a hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	50%	30%	5%		10%	**Total Score:**
	Score:	18	14	9	7		1	
	Total Sub-score:	0.90	7.00	2.70	0.35	0.00	0.10	**11.05**

0.55

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-006.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	**17**

0.85

Comments: One gravel road present within 100 feet of WL-LTZ-006.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, silt grass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Road (Zuck Rd).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.78**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793763°	-77.638901°	WL-LTZ-007

General Comments: WL-LTZ-007 is a small floodplain bench located along S-LTZ-005-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	30%	35%	20%		10%	**Total Score:**
	Score:	18	14	9	7		1	
	Total Sub-score:	0.90	4.20	3.15	1.40	0.00	0.10	**9.75**

0.49

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-007.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	**17**

0.85

Comments: One gravel road present within 100 feet of WL-LTZ-007.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, siltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Road (Zuck Rd).

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793710°	-77.643064°	WL-LTZ-008

General Comments: WL-LTZ-008 is a large floodplain system located along S-LTZ-006-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	20%	10%	10%	40%	10%	**Total Score:**	**0.40**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	1.80	2.80	0.90	0.70	1.60	0.10	**7.90**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One two-lane road present within 100 feet of WL-LTZ-008.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	9	* (0.33)	3	**0.65**
		Total Score:	**13**	

Comments: Three gravel roads, one two-lane road, and two driveays present within 300 feet of WL-LTZ-008.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Siltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: A portion of the wetland is pastured.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	17	**30**

0.75

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond, Road (Zuck Rd).

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793382°	-77.643021°	WL-LTZ-008-POW

General Comments: WL-LTZ-008-POW is a man-made pond adjacent to WL-LTZ-008.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	20%	10%	10%	30%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.47**
	Total Sub-score:	3.60	2.80	0.90	0.70	1.20	0.10	**9.30**

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One two-lane road present within 100 feet of WL-LTZ-008-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* **(0.67)**	10	
b. Roadbed 100-300:	9	* **(0.33)**	3	**0.65**
		Total Score:	**13**	

Comments: Three gravel roads, one two-lane road, and two driveays present within 300 feet of WL-LTZ-008-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Siltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetations stressors observed.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	19	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793347°	-77.642525°	WL-LTZ-009

General Comments: WL-LTZ-009 is a small floodplain bench system located along S-LTZ-006-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	20%	15%	15%	30%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.42**
	Total Sub-score:	1.80	2.80	1.35	1.05	1.20	0.10	**8.30**

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two gravel roads present within 100 feet of WL-LTZ-009.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	12	* (0.33)	4	**0.70**
		Total Score:	**14**	

Comments: Three gravel roads and two driveays present within 300 feet of WL-LTZ-009.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Siltgrass, autumn olive

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799571°	-77.657312°	WL-LTZ-010

General Comments: WL-LTZ-010 is a mesic wetland located within a heavily grazed pasture.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	20%	15%	10%	40%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.37**
	Total Sub-score:	0.90	2.80	1.35	0.70	1.60	0.10	**7.45**

Comments: 1 = roads, buildings; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-010.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	12	* (0.33)	4	**0.83**
		Total Score:	**17**	

Comments: Two two-lane roads and one parking lot present within 300 feet of WL-LTZ-010.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Heavy grazing.

a. Invasive Sub-Score:	12	**Total Score**	**0.70**
b. Vegetation Sub-Score:	16	**28**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800352°	-77.655247°	WL-LTZ-011-POW

General Comments: WL-LTZ-011-POW is a man-made pond located within the WL-LTZ-011 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	10%	5%	50%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	3.60	1.40	0.90	0.35	2.00	0.05	**8.30**

0.42

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two driveways present within 100 feet of WL-LTZ-011-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	15	* (0.33)	5	**0.75**
		Total Score:	**15**	

Comments: Two driveways present present within 300 feet of WL-LTZ-011-POW.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetations stressors observed.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/12/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800418°	-77.651068°	WL-LTZ-012

General Comments: WL-LTZ-012 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%	10%	10%	40%		**Total Score:**	
	Score:	18	14	9	7	4			**0.50**
	Total Sub-score:	5.40	1.40	0.90	0.70	1.60	0.00	**10.00**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-012.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-012.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed within wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.86**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800713°	-77.651324°	WL-LTZ-013

General Comments: WL-LTZ-013 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	10%	10%	10%	30%		**Total Score:**	
	Score:	18	14	9	7	4			**0.57**
	Total Sub-score:	7.20	1.40	0.90	0.70	1.20	0.00	**11.40**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-013.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-013.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800363°	-77.650001°	WL-LTZ-014

General Comments: WL-LTZ-014 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	10%	5%	5%	30%		**Total Score:**	
	Score:	18	14	9	7	4			**0.62**
	Total Sub-score:	9.00	1.40	0.45	0.35	1.20	0.00	**12.40**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-014.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-014.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed within wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.88**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800184°	-77.650070°	WL-LTZ-015

General Comments: WL-LTZ-015 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	10%	5%	5%	35%		**Total Score:**	
	Score:	18	14	9	7	4			**0.59**
	Total Sub-score:	8.10	1.40	0.45	0.35	1.40	0.00	**11.70**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-015.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-015.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	19	**31**

0.78

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.798616°	-77.647330°	WL-LTZ-016

General Comments: WL-LTZ-016 is a large floodplain system abutting Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%		10%	10%	20%	10%	**Total Score:**
	Score:	18		9	7	4	1	**0.58**
	Total Sub-score:	9.00	0.00	0.90	0.70	0.80	0.10	**11.50**

Comments: 4 = mowed areas; 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two 2-lane roads present within 100 feet of WL-LTZ-016.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.63**
		Total Score:	**13**	

Comments: Two 2-lane roads and one driveway present within 300 feet of WL-LTZ-016.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	19	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Presence of roads (Mountain Back Road, 322)

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.79**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800104°	-77.648492°	WL-LTZ-017

General Comments: WL-LTZ-017 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	60%	10%	10%	10%	10%		**Total Score:**	
	Score:	18	14	9	7	4			**0.71**
	Total Sub-score:	10.80	1.40	0.90	0.70	0.40	0.00	**14.20**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-017.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-017.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Multiflora rose

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	19	**31**

0.78

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.86**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800128°	-77.648299°	WL-LTZ-018

General Comments: WL-LTZ-018 is a small floodplain bench system located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	60%	10%	10%	10%	10%		**Total Score:**	
	Score:	18	14	9	7	4			**0.71**
	Total Sub-score:	10.80	1.40	0.90	0.70	0.40	0.00	**14.20**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-018.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-018.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	19	**31**

0.78

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.86**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.800400°	-77.649243°	WL-LTZ-019

General Comments: WL-LTZ-019 is a large floodplain system located along Sinking Creek. The wetland is seasonally mowed

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	65%	5%	5%	10%	15%		**Total Score:**	**0.71**
	Score:	18	14	9	7	4			
	Total Sub-score:	11.70	0.70	0.45	0.70	0.60	0.00	**14.15**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-019.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-019.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Seasonal mowing.

a. Invasive Sub-Score:	11	**Total Score**
b. Vegetation Sub-Score:	17	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.85**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792196°	-77.650880°	WL-LTZ-020

General Comments: The source of hydrology of WL-LTZ-020 is a perennial seep. The wetland is located in a valley setting and abuts a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	15%	15%		40%	15%	**Total Score:**	
	Score:	18	14	9		2	1		**0.36**
	Total Sub-score:	2.70	2.10	1.35	0.00	0.80	0.15	**7.10**	

Comments: 1 = shale pit; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-020.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-020.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Tatarian honeysuckle

	Condition Category																				CI = Total Score/40
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**	**0.70**
b. Vegetation Sub-Score:	19	**28**	

4. Hydrologic Modification Index

	Condition Category																				
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					CI = Total Score/20
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Excavation for pond.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																				
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					CI = Total Score/20
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																				
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No eutrophication stressors observed.

	Condition Category																				CI = Total Score/40
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Garbage/dumping.

a. Eutrophication Score	19	**Total Score:**	**0.85**
b. Contaminant Score	15	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793771°	-77.651164°	WL-LTZ-021

General Comments: WL-LTZ-021 is an isolated depressional wetland located within a gravel spoil area.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	15%	35%	15%	5%	25%	**Total Score:**
	Score:	18	14	9	7	2	1	**0.38**
	Total Sub-score:	0.90	2.10	3.15	1.05	0.10	0.25	**7.55**

Comments: 1 = gravel spoil area; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane present within 100 feet of WL-LTZ-021.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.78**
		Total Score:	**16**	

Comments: Three farm lanes and one driveway present within 300 feet of WL-LTZ-021.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Autumn olive

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Area underlain by compacted gravel.

a. Invasive Sub-Score:	16	**Total Score**
b. Vegetation Sub-Score:	17	**33**

0.83

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Excavation, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Gravel deposits.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Acidic drainage (gravel spoil area).

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	13	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797811°	-77.652297°	WL-LTZ-022

General Comments: WL-LTZ-022 is small floodplain bench located in a valley setting downgradient of man-made POW systems.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	5%		40%	35%	10%	**Total Score:**	**0.24**
	Score:	18	12		4	2	1		
	Total Sub-score:	1.80	0.60	0.00	1.60	0.70	0.10	**4.80**	

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-022.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	12	* (0.33)	4	**0.83**
		Total Score:	**17**	

Comments: Three driveways and one two-lane road present within 300 feet of WL-LTZ-022.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing around fringe.

a. Invasive Sub-Score:	2	**Total Score**	**0.48**
b. Vegetation Sub-Score:	17	**19**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Upgradient ponds.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment deposits observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797284°	-77.650840°	WL-LTZ-022-POW

General Comments: WL-LTZ-022-POW are two man-made ponds located upgradient of the WL-LTZ-022 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%		55%	20%	5%	**Total Score:**	
	Score:	18	14		4	2	1		**0.29**
	Total Sub-score:	1.80	1.40	0.00	2.20	0.40	0.05	**5.85**	

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-022-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	15	* (0.33)	5	**0.88**
		Total Score:	**18**	

Comments: One driveways and one farm lane present within 300 feet of WL-LTZ-022-POW.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	10	**Total Score**	**0.68**
b. Vegetation Sub-Score:	17	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Man-made pond.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment deposits observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797896°	-77.647691°	WL-LTZ-023

General Comments: WL-LTZ-023 is a small floodplain bench located in a concave area located long 322 and connected to WL-LTZ-023-POW

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	15%	10%	20%		10%	**Total Score:**
	Score:	18	14	9	4		1	
	Total Sub-score:	8.10	2.10	0.90	0.80	0.00	0.10	**12.00**

0.60

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One two-lane road present within 100 feet of WL-LTZ-023.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	16	* (0.67)	11
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	**15**

0.77

Comments: One two-lane road and one driveway present within 300 feet of WL-LTZ-023.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Excavation, ditching, stormwater inputs, 322.

		0.45
Score:	**9**	

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slopes.

		0.85
Score:	**17**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Garbage/dumping.

a. Eutrophication Score	19	**Total Score:**	**0.85**
b. Contaminant Score	15	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797843°	-77.646846°	WL-LTZ-023-POW

General Comments: WL-LTZ-023-POW is a man-made pond located along 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	20%	10%	20%		10%	**Total Score:**	
	Score:	18	14	9	4		1		**0.59**
	Total Sub-score:	7.20	2.80	0.90	0.80	0.00	0.10	**11.80**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One two-lane road present within 100 feet of WL-LTZ-023-POW.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.			**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: One two-lane road and one driveway present within 300 feet of WL-LTZ-023-POW.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Man-made pond, stormwater inputs.

		0.60
Score:	**12**	

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slopes.

		0.85
Score:	**17**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Dense algae observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Garbage/dumping.

a. Eutrophication Score	13	**Total Score:**	**0.70**
b. Contaminant Score	15	**28**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793567°	-77.660354°	WL-LTZ-024

General Comments: WL-LTZ-024 originates from a seep at the head of a valley.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		10%	60%	5%	**Total Score:**	**0.28**
	Score:	18	14		4	2	1		
	Total Sub-score:	1.80	2.10	0.00	0.40	1.20	0.05	**5.55**	

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road and one gravel road present within 100 feet of WL-LTZ-024.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	13	* (0.33)	4	**0.68**
		Total Score:	**14**	

Comments: One 2-lane road and two gravel roads present within 300 feet of WL-LTZ-024.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Ag fields and mowing along wetland fringe.

a. Invasive Sub-Score:	2	**Total Score**	**0.48**
b. Vegetation Sub-Score:	17	**19**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Grading, microtopographic alterations, roadway/culvert.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Ag runoff.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Runoff from adjacent ag fields.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Old farm equipment in wetland.

a. Eutrophication Score	15	**Total Score:**	**0.75**
b. Contaminant Score	15	**30**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.61**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795204°	-77.657672°	WL-LTZ-025

General Comments: WL-LTZ-025 is a mesic farmland wetland originating from an artesian well and is located among ag fields.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:			10%	5%	85%		**Total Score:**	**0.13**
	Score:			7	4	2			
	Total Sub-score:	0.00	0.00	0.70	0.20	1.70	0.00	**2.60**	

Comments: 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-025.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-025.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: The wetland is partailly located in an ag field, mowing.

a. Invasive Sub-Score:	0	**Total Score**
b. Vegetation Sub-Score:	14	**14**

0.35

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, artesian well.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Plowing.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Runoff from adjacent ag fields.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Precipitate buildup around artesian well.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	13	**28**

0.70

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.61**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/02/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.794386°	-77.650619°	WL-LTZ-026

General Comments: The source of hydrology of WL-LTZ-021 is an isolated depressional wetland located adjacent a gravel spoil area and agricultural field.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	5%	30%	10%	25%	25%	**Total Score:**
	Score:	18	14	9	7	2	1	
	Total Sub-score:	0.90	0.70	2.70	0.70	0.50	0.25	**5.75**

0.29

Comments: 1 = gravel spoil area; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-026.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	13	* (0.33)	4
		Total Score:	**17**

0.85

Comments: Three farm lanes and one driveway present within 300 feet of WL-LTZ-026.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	19	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Excavation, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment deposits observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.71**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/02/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797546°	-77.653728°	WL-LTZ-027

General Comments: WL-LTZ-027 is a large floodplain system located along S-LTZ-015-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	20%	10%	20%	15%	5%	**Total Score:**
	Score:	18	14	7	4	2	1	**0.50**
	Total Sub-score:	5.40	2.80	0.70	0.80	0.30	0.05	**10.05**

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-027.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: One driveway and one two-lane road present within 100 feet of WL-LTZ-027.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Driveway culvert, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/02/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797917°	-77.654581°	WL-LTZ-028

General Comments: WL-LTZ-028 is a large floodplain system connected to WL-LTZ-028.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%	20%	30%		10%	**Total Score:**	
	Score:	18	14	7	4		1		**0.48**
	Total Sub-score:	5.40	1.40	1.40	1.20	0.00	0.10	**9.50**	

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway present within 100 feet of WL-LTZ-028.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.78**
		Total Score:	**16**	

Comments: Two driveways and one two-lane road present within 100 feet of WL-LTZ-028.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	19	**31**

0.78

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Driveway culvert, excavation for pond.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/02/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.798141°	-77.655109°	WL-LTZ-028-POW

General Comments: WL-LTZ-028 is a lman-made pond connected to WL-LTZ-028

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	20%	10%	10%	10%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.61**
	Total Sub-score:	7.20	2.80	0.90	0.70	0.40	0.10	**12.10**

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One two-lane road present within 100 feet of WL-LTZ-028-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: Two driveways and one two-lane road present within 100 feet of WL-LTZ-028-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	15	**Total Score**
b. Vegetation Sub-Score:	19	**34**

0.85

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Berm, excavation for pond, 322.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Heavy algae cover

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Trash present.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	15	**28**

0.70

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/02/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799067°	-77.661764°	WL-LTZ-029

General Comments: WL-LTZ-029 is a mesic wetland located between two ag fields.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:			5%	5%	85%	5%	**Total Score:**	
	Score:			7	4	2	1		
	Total Sub-score:	0.00	0.00	0.35	0.20	1.70	0.05	**2.30**	**0.12**

Comments: 4 = mowed areas; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-029.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	13	* (0.33)	4	**0.85**
		Total Score:	**17**	

Comments: No roads present within 300 feet of WL-LTZ-029.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: The wetland is partailly located in an ag field, mowing.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	14	**17**

0.43

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, ditching.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Plowing.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Runoff from adjacent ag fields.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.63**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.789604°	-77.667896°	WL-LTZ-030

General Comments: WL-LTZ-030 is a large system in the floodplains of Sinking Creek and Boal Gap Run.

1. Wetland Zone of Influence Condition Index

	Condition Category																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	25%	5%	5%	10%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.69**
	Total Sub-score:	9.00	3.50	0.45	0.35	0.40	0.05	**13.75**

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																		
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-030.

	Condition Categories																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	18	* (0.33)	6	**0.93**
		Total Score:	**19**	

Comments: One driveway present within 300 feet of WL-LTZ-030.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Stiltgrass, Autumn olive.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: The wetland is partially located in a grazed pasture; partially mowed; selected tree harvesting.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	12	**19**

0.48

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.79**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.790083°	-77.663922°	WL-LTZ-031

General Comments: WL-LTZ-031 is a floodplain system adjacent to Boal Gap Run.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							Total Score:	
Scoring:	% ZOI Area:	60%	25%	5%		5%	5%		
	Score:	18	14	9		4	1		
	Total Sub-score:	10.80	3.50	0.45	0.00	0.20	0.05	**15.00**	**0.75**

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-031.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	13	* **(0.33)**	4	**0.85**
		Total Score:	**17**	

Comments: One 2-lane road and two driveways present within 300 feet of WL-LTZ-031.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.80**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.790148°	-77.664511°	WL-LTZ-032

General Comments: WL-LTZ-032 is a small isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	35%	10%		10%	5%	**Total Score:**	**0.67**
	Score:	18	14	9		4	1		
	Total Sub-score:	7.20	4.90	0.90	0.00	0.40	0.05	**13.45**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway within 100 feet of WL-LTZ-032.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	18	* (0.33)	6	**0.90**
		Total Score:	**18**	

Comments: One driveways present within 300 feet of WL-LTZ-032.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass

	Condition Category																				CI = Total Score/40
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Mowing along fringe.

a. Invasive Sub-Score:	4	**Total Score**	**0.53**
b. Vegetation Sub-Score:	17	**21**	

4. Hydrologic Modification Index

	Condition Category																				CI = Total Score/20
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Microtopographic alterations, grading.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																				CI = Total Score/20
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																				
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No eutrophication stressors observed.

	Condition Category																				CI = Total Score/40
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.786160°	-77.713955°	WL-LTZ-033

General Comments: Wetland is a small floodplain bench of S-LTZ-045-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		65%	5%	5%	**Total Score:**	
	Score:	18	14		7	4	1		**0.44**
	Total Sub-score:	1.80	2.10	0.00	4.55	0.20	0.05	**8.70**	

Comments: 1 = roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-033.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: 1 two lane paved road, 1 driveway present within 300 feet of WL-LTZ-033.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.790123°	-77.663207°	WL-LTZ-034

General Comments: WL-LTZ-034 is a floodplain system adjacent to Boal Gap Run.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	55%	20%	5%		15%	5%	**Total Score:**
	Score:	18	14	9		4	1	**0.69**
	Total Sub-score:	9.90	2.80	0.45	0.00	0.60	0.05	**13.80**

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-034.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	13	* (0.33)	4	**0.85**
		Total Score:	**17**	

Comments: One 2-lane road and two driveways present within 300 feet of WL-LTZ-034.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass, Multiflora rose

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	19	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/08/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792554°	-77.663662°	WL-LTZ-035

General Comments: WL-LTZ-035 is a large system in the floodplains of Sinking Creek Boal Gap Run. The wetland has PEM, PSS, and PFO components and extends into the surrounding ag land.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	15%	10%	30%	10%	5%	**Total Score:**
	Score:	18	14	9	4	2	1	
	Total Sub-score:	5.40	2.10	0.90	1.20	0.20	0.05	**9.85**

0.49

Comments: 1 = roads and buildings; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road, two driveways, and one gravel road present within 100 feet of WL-LTZ-035.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	12	* (0.67)	8
b. Roadbed 100-300:	11	* (0.33)	4
		Total Score:	**12**

0.58

Comments: One 2-lane road, three driveways, and one gravel road present within 300 feet of WL-LTZ-035.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass, Multiflora rose

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Portions of the wetland are mowed/grazed.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	14	**19**

0.48

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts, dewatering.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from livestock.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.66**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/08/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795072°	-77.665996°	WL-LTZ-036

General Comments: WL-LTZ-036 is a floodplain system along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	60%	10%	10%	15%		5%	**Total Score:**	
	Score:	18	14	9	4		1		**0.69**
	Total Sub-score:	10.80	1.40	0.90	0.60	0.00	0.05	**13.75**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway present within 100 feet of WL-LTZ-036.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: Two driveways present within 300 feet of WL-LTZ-036.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Portions of the wetland are mowed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, grading, French drain.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Formation of algal mats.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	14	**Total Score:**
b. Contaminant Score	19	**33**

0.83

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795626°	-77.665534°	WL-LTZ-037

General Comments: WL-LTZ-037 is a man-made POW system.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	5%	5%	50%		10%	**Total Score:**	
	Score:	18	14	9	4		1		**0.43**
	Total Sub-score:	5.40	0.70	0.45	2.00	0.00	0.10	**8.65**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway present within 100 feet of WL-LTZ-037.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: Two driveways present within 300 feet of WL-LTZ-037.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing around pond edge, aquatic weed control.

a. Invasive Sub-Score:	13	**Total Score**	**0.68**
b. Vegetation Sub-Score:	14	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Pond

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment stressors.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.794418°	-77.667735°	WL-LTZ-038

General Comments: WL-LTZ-038 is a large system in the floodplains of Sinking Creek Boal Gap Run. The wetland has PEM, PSS, and PFO components and extends into the surrounding ag land.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	30%	10%	25%			**Total Score:**	**0.62**
	Score:	18	14	9	4				
	Total Sub-score:	6.30	4.20	0.90	1.00	0.00	0.00	**12.40**	

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two driveways present within 100 feet of WL-LTZ-038.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: Three driveways present within 300 feet of WL-LTZ-038.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass, Multiflora rose, Barberry.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Portions of the wetland are mowed/grazed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	14	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, dewatering.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from livestock.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796797°	-77.666641°	WL-LTZ-039

General Comments: WL-LTZ-039 is a floodplain bench system along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	5%	5%	55%		10%	**Total Score:**	
	Score:	18	14	9	4		1		**0.40**
	Total Sub-score:	4.50	0.70	0.45	2.20	0.00	0.10	**7.95**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road and one driveway present within 100 feet of WL-LTZ-039.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.67**
		Total Score:	**13**	

Comments: One 2-lane road and three driveways present within 300 feet of WL-LTZ-039.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: The wetland is routinely mowed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	14	**33**

0.83

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, stormwater inputs.

Score:	**13**

0.65

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**16**

0.80

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796614°	-77.667928°	WL-LTZ-040

General Comments: WL-LTZ-040 is a floodplain system located in a mowed, disturbed pasture along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	10%	5%	40%		10%	**Total Score:**	
	Score:	18	14	9	4		1		**0.49**
	Total Sub-score:	6.30	1.40	0.45	1.60	0.00	0.10	**9.85**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road and one driveway present within 100 feet of WL-LTZ-040.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	9	* (0.33)	3	**0.62**
		Total Score:	**12**	

Comments: One 2-lane road and five driveways present within 300 feet of WL-LTZ-040.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: The wetland is routinely mowed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	14	**33**

0.83

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, stormwater inputs, US 322.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/14/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792495°	-77.664972°	WL-LTZ-041

General Comments: WL-LTZ-041 is a small floodplain bench located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	80%	10%	5%	5%			**Total Score:**
	Score:	18	14	9	4			**0.82**
	Total Sub-score:	14.40	1.40	0.45	0.20	0.00	0.00	**16.45**

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-041.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-041.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/14/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.791592°	-77.664193°	WL-LTZ-042

General Comments: WL-LTZ-042 is a small floodplain bench located along Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	80%	10%	5%	5%			**Total Score:**
	Score:	18	14	9	4			**0.82**
	Total Sub-score:	14.40	1.40	0.45	0.20	0.00	0.00	**16.45**

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-042.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-042.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	10	**Total Score**
b. Vegetation Sub-Score:	19	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.87**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796456°	-77.679597°	WL-LTZ-043

General Comments: WL-LTZ-043 is a large floodplain system located along S-LTZ-023-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:			30%	30%	20%	20%	**Total Score:**	
	Score:			9	7	4	1		**0.29**
	Total Sub-score:	0.00	0.00	2.70	2.10	0.80	0.20	**5.80**	

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two 2-lane roads and one 1-lane road present within 100 feet of WL-LTZ-043.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	12	* (0.67)	8	
b. Roadbed 100-300:	8	* (0.33)	3	**0.53**
		Total Score:	**11**	

Comments: Two 2-lane roads, one 1-lane road, and one driveway present within 300 feet of WL-LTZ-043.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: A portion of the wetland is mowed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, pond, grading, stormwater inputs, culverts.

Score:	**7**

0.35

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.65**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795796°	-77.681221°	WL-LTZ-043-POW

General Comments: WL-LTZ-043-POW is a pond within the WL-LTZ-043 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%		35%	15%	20%	10%	**Total Score:**
	Score:	18		9	7	4	1	
	Total Sub-score:	3.60	0.00	3.15	1.05	0.80	0.10	**8.70**

0.44

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-043-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	13	* (0.33)	4
		Total Score:	**17**

0.85

Comments: Two 2-lane roads present within 300 feet of WL-LTZ-043-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/22/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797663°	-77.684808°	WL-LTZ-044-POW

General Comments: WL-LTZ-044-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%			75%	5%	**Total Score:**	
	Score:	18	14			4	1		**0.31**
	Total Sub-score:	1.80	1.40	0.00	0.00	3.00	0.05	**6.25**	

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-044-POW.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One driveway present within 300 feet of WL-LTZ-044-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Aquatic weed control.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	16	**35**

0.88

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.76**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/22/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786782°	-77.691425°	WL-LTZ-048

General Comments: WL-LTZ-048 is a disturbed isolated despressional wetland along Taylor Hill Road.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	20%	15%	15%	35%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.38**
	Total Sub-score:	0.90	2.80	1.35	1.05	1.40	0.10	**7.60**

Comments: 1 = roads, buildings, gravel areas; 4 = mowed/pasture areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-LTZ-048.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: One 2-lane road, one 1-lane road, and one driveway present within 300 feet of WL-LTZ-048.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Multiflora rose..

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	19	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Excavation, microtopographic alterations, roadway.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding bank/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Acidic drainage from excavation activities.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	13	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.69**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	02/22/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.791170°	-77.687519°	WL-LTZ-049

General Comments: WL-LTZ-049 is a large floodplain located along US 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%			70%	10%	**Total Score:**	
	Score:	18	14			4	1		**0.31**
	Total Sub-score:	1.80	1.40	0.00	0.00	2.80	0.10	**6.10**	

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road and three driveways present within 100 feet of WL-LTZ-049.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	9	* (0.33)	3	**0.58**
		Total Score:	**12**	

Comments: One 2-lane road, one gravel road, and four driveways present within 300 feet of WL-LTZ-049.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Wetland mowed along fringe.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	17	**20**

0.50

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, grading, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure runoff.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.63**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.789655°	-77.690001°	WL-LTZ-049-POW

General Comments: WL-LTZ-049-POW is a man-made pond in the WL-LTZ-049 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	15%			65%		**Total Score:**	
	Score:	18	14			4			**0.42**
	Total Sub-score:	3.60	2.10	0.00	0.00	2.60	0.00	**8.30**	

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-049-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-049-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Pond mowed along fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Man-made pond.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.791852°	-77.685913°	WL-LTZ-050

General Comments: WL-LTZ-050 is a large floodplain located along US 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%			10%	60%	10%	**Total Score:**	**0.34**
	Score:	18			7	4	1		
	Total Sub-score:	3.60	0.00	0.00	0.70	2.40	0.10	**6.80**	

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Two driveways present within 100 feet of WL-LTZ-050.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: One 2-lane road and two driveways present within 300 feet of WL-LTZ-050.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Wetland mowed along fringe.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	17	**20**

0.50

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, grading, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure runoff.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.67**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.791479°	-77.685794°	WL-LTZ-051

General Comments: WL-LTZ-051 is a large floodplain located along US 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%			70%	10%	**Total Score:**	
	Score:	18	14			4	1		**0.31**
	Total Sub-score:	1.80	1.40	0.00	0.00	2.80	0.10	**6.10**	

Comments: 1 = roads, buildings, gravel areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-051.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	16	* **(0.33)**	5	**0.90**
		Total Score:	**18**	

Comments: Two driveways present within 300 feet of WL-LTZ-051.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Wetland mowed along fringe.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Microtopographic alterations, grading, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.787749°	-77.695491°	WL-LTZ-052

General Comments: Wetland is a large floodplain system associated with Sleepy Creek (S-LTZ-025-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	5%	5%	10%	60%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.31**
	Total Sub-score:	1.80	0.70	0.45	0.70	2.40	0.10	**6.15**

Comments: 1 = buildings/roads, 4 = mowed areas/pasture

2. Roadbed Presence Index

	Condition Categories																		
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 2 one-lane paved road, 1 driveway present within 100 feet of WL-LTZ-052.

	Condition Categories																		CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	11	* (0.67)	7	
b. Roadbed 100-300:	11	* (0.33)	4	**0.55**
		Total Score:	**11**	

Comments: 2 one-lane paved road, 4 driveways present within 300 feet of WL-LTZ-052.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing, burning.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	14	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs, microtopographical alterations (horse tracks).

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Pasture with manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.64**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.785428°	-77.705464°	WL-LTZ-053

General Comments: WL-LTZ-053 is a large hillside/headwater seep that drains to a field.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	10%			60%	5%	**Total Score:**	**0.42**
	Score:	18	14			4	1		
	Total Sub-score:	4.50	1.40	0.00	0.00	2.40	0.05	**8.35**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-053.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One gravel road present within 100 feet of WL-LTZ-053.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing, brush clearing.

a. Invasive Sub-Score:	10	**Total Score**	**0.60**
b. Vegetation Sub-Score:	14	**24**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Microtopographic alterations, constructed berm.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks/slopes.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.7844173°	-77.704570°	WL-LTZ-053-POW

General Comments: WL-LTZ-053-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	20%	10%	10%	20%	5%	**Total Score:**	
	Score:	18	14	9	7	4	1		**0.58**
	Total Sub-score:	6.30	2.80	0.90	0.70	0.80	0.05	**11.55**	

Comments: 1 = roads/buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-053-POW.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One gravel road present within 100 feet of WL-LTZ-053-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond (berm, excavation, grading), microtopographic alterations around fringe.

Score:	**9**

0.45

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793081°	-77.684288°	WL-LTZ-054

General Comments: WL-LTZ-054 is located within the floodways of S-LTZ-023-PER, S-LTZ-030-PER, and S-LTZ-034-PER along US 322.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	10%		5%	60%	10%	**Total Score:**	
	Score:	18	14		7	4	1		**0.35**
	Total Sub-score:	2.70	1.40	0.00	0.35	2.40	0.10	**6.95**	

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road and two 2-lane roads present within 100 feet of WL-LTZ-054.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	12	* (0.67)	8	
b. Roadbed 100-300:	12	* (0.33)	4	**0.60**
		Total Score:	**12**	

Comments: One gravel road and two 2-lane roads present within 300 feet of WL-LTZ-054.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Wetland mowed along fringe.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	17	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, grading, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.68**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.792303°	-77.683561°	WL-LTZ-054-POW

General Comments: WL-LTZ-054-POW is a man-made pond in the WL-LTZ-054 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	5%			80%		**Total Score:**	**0.33**
	Score:	18	14			4			
	Total Sub-score:	2.70	0.70	0.00	0.00	3.20	0.00	**6.60**	

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-054-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-054-POW.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Pond mowed along fringe.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Man-made pond.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.77**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.793389°	-77.680472°	WL-LTZ-055

General Comments: The source of hydrology for WL-LTZ-055 is a hillside seasonal seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		5%	10%	20%	55%	10%	**Total Score:**	
	Score:		14	9	7	4	1		**0.27**
	Total Sub-score:	0.00	0.70	0.90	1.40	2.20	0.10	**5.30**	

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-055.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One gravel road present within 300 feet of WL-LTZ-055.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: A portion of the wetland is mowed.

a. Invasive Sub-Score:	7	**Total Score**	**0.60**
b. Vegetation Sub-Score:	17	**24**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Microtopographic alterations.

Score:	17	**0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	19	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786111°	-77.690500°	WL-LTZ-056

General Comments: WL-LTZ-056 is a large floodplain system along S-LTZ-031-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	35%	20%	10%	20%	5%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.59**
	Total Sub-score:	6.30	2.80	0.90	1.40	0.20	0.10	**11.70**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One 1-lane road and two driveways present within 100 feet of WL-LTZ-056.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	11	* (0.33)	4	**0.62**
		Total Score:	**12**	

Comments: One 1-lane road, four driveways, and one ATV lane present within 300 feet of WL-LTZ-056.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Multiflora rose, Tatarian honeysuckle.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Right-of-way clearing.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	17	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786021°	-77.689334°	WL-LTZ-057

General Comments: WL-LTZ-057 is a small depressional system located along Taylor Hill Rd.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	25%	5%	5%	10%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.65**
	Total Sub-score:	8.10	3.50	0.45	0.35	0.40	0.10	**12.90**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 1-lane road and two driveways present within 100 feet of WL-LTZ-057.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	11	* (0.33)	4	**0.62**
		Total Score:	**12**	

Comments: One 1-lane road, four driveways, and one ATV trail present within 300 feet of WL-LTZ-057.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing along wetland fringe.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Ditching, excavation, grading, stormwater inputs.

Score:	**8**

0.40

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781201°	-77.754204°	WL-LTZ-058

General Comments: WL-LTZ-058 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	5%		80%		5%	**Total Score:**	**0.28**
	Score:	18	9		4		1		
	Total Sub-score:	1.80	0.45	0.00	3.20	0.00	0.05	**5.50**	

Comments: 1 = roads; 4 = mowed/pasture areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway and one golf course path present within 100 feet of WL-LTZ-058.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	15	* (0.33)	5	**0.75**
		Total Score:	**15**	

Comments: One driveway and one golf course path present within 300 feet of WL-LTZ-058.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: A large portion of the wetland is pastured.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	16	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.66**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780832°	-77.756876°	WL-LTZ-059

General Comments: WL-LTZ-059 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		15%	5%	15%	60%	5%	**Total Score:**	
	Score:		18	9	7	4	1		**0.33**
	Total Sub-score:	0.00	2.70	0.45	1.05	2.40	0.05	**6.65**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two golf course patsh present within 100 feet of WL-LTZ-059.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	13	* (0.33)	4	**0.72**
		Total Score:	**14**	

Comments: Four golf course paths present within 300 feet of WL-LTZ-059.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	17	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.70**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780910°	-77.757664°	WL-LTZ-060-POW / WL-LTZ-061-POW

General Comments: WL-LTZ-060-POW / WL-LTZ-061-POW is a man-made pond in a golf course; the wetland has a PEM portion around its fringe.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	20%	10%	5%	30%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	4.50	2.80	0.90	0.35	1.20	0.10	**9.85**

0.49

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: One 2-lane road and two golf course paths present within 100 feet of WL-LTZ-060-POW / WL-LTZ-061-POW.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	13	* (0.67)	9
b. Roadbed 100-300:	12	* (0.33)	4
		Total Score:	13

CI = Total Score/20: **0.63**

Comments: One 2-lane road and three golf course paths present within 300 feet of WL-LTZ-060-POW / WL-LTZ-061-POW.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass around pond fringe.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe, aquatic weed control.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	14	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, excavation, pond.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.69**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781194°	-77.7577778°	WL-LTZ-062

General Comments: WL-LTZ-062 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		20%	5%	10%	60%	5%	**Total Score:**	
	Score:		18	9	7	4	1		**0.36**
	Total Sub-score:	0.00	3.60	0.45	0.70	2.40	0.05	**7.20**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Two golf course paths present within 100 feet of WL-LTZ-062.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	14	* (0.33)	5	**0.73**
		Total Score:	**15**	

Comments: Three golf course paths present within 300 feet of WL-LTZ-062.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	8	**Total Score**	**0.63**
b. Vegetation Sub-Score:	17	**25**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781083°	-77.759889°	WL-LTZ-063-POW

General Comments: WL-LTZ-063-POW is a man-made pond in a golf course.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%		10%	15%	40%	10%	**Total Score:**
	Score:	18		9	7	4	1	
	Total Sub-score:	4.50	0.00	0.90	1.05	1.60	0.10	**8.15**

0.41

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One 2-lane road present within 100 feet of WL-LTZ-063-POW.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	15	* (0.67)	10
b. Roadbed 100-300:	12	* (0.33)	4
		Total Score:	**14**

0.70

Comments: One 2-lane road and three golf course paths present within 300 feet of WL-LTZ-063-POW.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass around pond fringe.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe, aquatic weed control.

a. Invasive Sub-Score:	13	**Total Score**	**0.68**
b. Vegetation Sub-Score:	14	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, excavation, pond.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780695°	-77.760328°	WL-LTZ-064

General Comments: WL-LTZ-064 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:		Optimal	Suboptimal		Marginal		Poor		
Scoring:	% ZOI Area:		20%	5%		10%	55%	10%	**Total Score:**	
	Score:		18	9		7	4	1		**0.35**
	Total Sub-score:	0.00	3.60	0.45		0.70	2.20	0.10	**7.05**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One golf course path and one 2-lane road present within 100 feet of WL-LTZ-064.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.67**
		Total Score:	**13**	

Comments: Three golf course paths and one 2-lane road present within 300 feet of WL-LTZ-064.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779860°	-77.761060°	WL-LTZ-065

General Comments: WL-LTZ-065 is a floodplain bench located in golf course along S-LTZ-038-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:			5%	10%	70%	15%	Total Score:
	Score:			9	7	4	1	
	Total Sub-score:	0.00	0.00	0.45	0.70	2.80	0.15	4.10

0.21

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: Two golf course paths and one 2-lane road present within 100 feet of WL-LTZ-065.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	13	* (0.67)	9
b. Roadbed 100-300:	12	* (0.33)	4
		Total Score:	13

CI = Total Score/20: 0.63

Comments: Three golf course paths and one 2-lane road present within 300 feet of WL-LTZ-065.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing around fringe.

a. Invasive Sub-Score:	7	**Total Score**	**0.60**
b. Vegetation Sub-Score:	17	**24**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Ditching, culverts.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.67**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780861°	-77.762222°	WL-LTZ-066-POW

General Comments: WL-LTZ-066-POW is a man-made pond in a golf course.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	5%			80%	5%	**Total Score:**	**0.28**
	Score:	18	12			4	1		
	Total Sub-score:	1.80	0.60	0.00	0.00	3.20	0.05	**5.65**	

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Two golf course paths present within 100 feet of WL-LTZ-066-POW.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	14	* (0.33)	5	**0.73**
		Total Score:	**15**	

Comments: Three golf course paths present within 300 feet of WL-LTZ-066-POW.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass around pond fringe.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe, aquatic weed control.

a. Invasive Sub-Score:	13	**Total Score**	**0.68**
b. Vegetation Sub-Score:	14	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, excavation, pond.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.69**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/09/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780462°	-77.751457°	WL-LTZ-067

General Comments: WL-LTZ-067 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	20%	35%	40%		5%	**Total Score:**
	Score:	18	9	7	4		1	
	Total Sub-score:	0.90	1.80	2.45	1.60	0.00	0.05	**6.80**

0.34

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road and one driveway present within 100 feet of WL-LTZ-067.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	15	* **(0.67)**	10
b. Roadbed 100-300:	14	* **(0.33)**	5
		Total Score:	**15**

0.73

Comments: One1-lane road, one gravel road, and one driveway present within 300 feet of WL-LTZ-067.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Redtop.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: A portion of the wetland is pastured.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	17	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algal mats, manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.66**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786179°	-77.688880°	WL-LTZ-068

General Comments: WL-LTZ-068 is a floodplain system along S-LTZ-031-PER and Taylor Hill Rd.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	20%	10%	10%	20%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.54**
	Total Sub-score:	5.40	2.80	0.90	0.70	0.80	0.10	**10.70**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 1-lane road and three driveways present within 100 feet of WL-LTZ-068.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	11	* (0.33)	4	**0.62**
		Total Score:	**12**	

Comments: One 1-lane road, four driveways, and one ATV trail present within 300 feet of WL-LTZ-068.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing.	**a. Invasive Sub-Score:**	5	**Total Score**
	b. Vegetation Sub-Score:	17	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Ditching, microtopographic alterations, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

	a. Eutrophication Score	19	**Total Score:**
	b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786366°	-77.686073°	WL-LTZ-069

General Comments: WL-LTZ-069 is a floodplain system along S-LTZ-031-PER and Taylor Hill Rd.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	15%	5%	5%	40%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.46**
	Total Sub-score:	4.50	2.10	0.45	0.35	1.60	0.10	**9.10**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two 1-lane roads and one driveway present within 100 feet of WL-LTZ-068.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	8	* (0.33)	3	**0.60**
		Total Score:	**12**	

Comments: Two 1-lane roads and six driveways present within 300 feet of WL-LTZ-068.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	5	**Total Score**	**0.55**
b. Vegetation Sub-Score:	17	**22**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Ditching, microtopographic alterations, culverts.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.68**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786701°	-77.685005°	WL-LTZ-070

General Comments: WL-LTZ-070 is a small despressional wetland on the fringe of WL-LTZ-070.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	20%	10%	5%	30%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.49**
	Total Sub-score:	4.50	2.80	0.90	0.35	1.20	0.10	**9.85**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-070.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.78**
		Total Score:	**16**	

Comments: Two 1-lane roads and two driveways present within 300 feet of WL-LTZ-070.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing around fringe.

a. Invasive Sub-Score:	8	**Total Score**	**0.63**
b. Vegetation Sub-Score:	17	**25**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Grading, excavation, pond.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786574°	-77.684887°	WL-LTZ-070-POW

General Comments: WL-LTZ-070-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	20%	10%	5%	30%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.49**
	Total Sub-score:	4.50	2.80	0.90	0.35	1.20	0.10	**9.85**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-070-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.78**
		Total Score:	**16**	

Comments: Two 1-lane roads and two driveways present within 300 feet of WL-LTZ-070-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	10	**Total Score**	**0.68**
b. Vegetation Sub-Score:	17	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, excavation, pond.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786492°	-77.684737°	WL-LTZ-071

General Comments: WL-LTZ-071 is a hillside seep that drains to S-LTZ-037-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	20%	10%	5%	25%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.53**
	Total Sub-score:	5.40	2.80	0.90	0.35	1.00	0.10	**10.55**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-071.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: One 1-lane road and two driveways present within 300 feet of WL-LTZ-071.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	10	**Total Score**
b. Vegetation Sub-Score:	17	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.79**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782270°	-77.740090°	WL-LTZ-073

General Comments: WL-LTZ-073 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	15%	20%	20%	30%	5%	**Total Score:**
	Score:	18	9	7	4	2	1	
	Total Sub-score:	1.80	1.35	1.40	0.80	0.60	0.05	**6.00**

0.30

Comments: 1 = roads; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road and two farm lanes present within 100 feet of WL-LTZ-073.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: One gravel road and two farm lanes present within 300 feet of WL-LTZ-073.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Ag along fringe; a portion of the wetland is pastured.

a. Invasive Sub-Score:	7	**Total Score**	**0.55**
b. Vegetation Sub-Score:	15	**22**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Microtopographic alterations, culverts.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from pasture.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**	**0.85**
b. Contaminant Score	19	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.66**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.7817849°	-77.741343°	WL-LTZ-073-POW

General Comments: WL-LTZ-073-POW is a man-made pond in the WL-LTZ-073 complex.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		5%	85%			10%	**Total Score:**	**0.33**
	Score:		9	7			1		
	Total Sub-score:	0.00	0.45	5.95	0.00	0.00	0.10	**6.50**	

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane present within 100 feet of WL-LTZ-073-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	15	* (0.33)	5	**0.82**
		Total Score:	**16**	

Comments: One gravel road and one farm lane present within 300 feet of WL-LTZ-073-POW.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasives observed in wetland.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Man-made pond.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Eroding banks.

Score:	**16**

0.80

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Algae formation.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/28/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778735°	-77.735638°	WL-LTZ-074

General Comments: Wetland is a small isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category										
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**	**Suboptimal**		**Marginal**		**Poor**					**CI = Total Score/20**
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**					

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	40%		5%	5%		**Total Score:**
	Score:	18	14		7	4		**0.76**
	Total Sub-score:	9.00	5.60	0.00	0.35	0.20	0.00	**15.15**

Comments: 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories										
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	High Optimal: No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**				

Comments: No roadways present within 100 feet of WL-LTZ-074.

	Condition Categories										
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**				

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	*** (0.67)**	13	
b. Roadbed 100-300:	19	*** (0.33)**	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-074.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	1	**Total Score**	**0.50**
b. Vegetation Sub-Score:	19	**20**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**		**0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**		**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/29/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776039°	-77.738538°	WL-LTZ-075-POW

General Comments: Wetland is a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	20%		5%		5%	**Total Score:**	**0.79**
	Score:	18	14		7		1		
	Total Sub-score:	12.60	2.80	0.00	0.35	0.00	0.05	**15.80**	

Comments: 1 = roadways

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-075-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	16	* (0.33)	5	**0.90**
		Total Score:	**18**	

Comments: 2 driveways present within 300 feet of WL-LTZ-075-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	16	**Total Score**	**0.88**
b. Vegetation Sub-Score:	19	**35**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging/excavation, grading, dike/weir/dam.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/29/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776201°	-77.739163°	WL-LTZ-076

General Comments: Wetland is a small floodplain bench of S-LTZ-039-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	65%	15%		5%	5%	10%	**Total Score:**	**0.72**
	Score:	18	14		7	4	1		
	Total Sub-score:	11.70	2.10	0.00	0.35	0.20	0.10	**14.45**	

Comments: 1 = roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway present within 100 feet of WL-LTZ-076.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: 2 driveways present within 300 feet of WL-LTZ-076.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/29/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.781853°	-77.707914°	WL-LTZ-077

General Comments: Wetland is a small floodplain bench of S-LTZ-040-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	75%	20%				5%	**Total Score:**	**0.82**
	Score:	18	14				1		
	Total Sub-score:	13.50	2.80	0.00	0.00	0.00	0.05	**16.35**	

Comments: 1 = roadways

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-LTZ-077.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-076.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/29/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.782352°	-77.707893°	WL-LTZ-078

General Comments: Wetland is a hillside seep that partially drains to Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	75%	20%				5%	Total Score:	0.82
	Score:	18	14				1		
	Total Sub-score:	13.50	2.80	0.00	0.00	0.00	0.05	16.35	

Comments: 1 = buildings/roads

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: No roadways present within 100 feet of WL-LTZ-078.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	0.92
		Total Score:	18	

Comments: 1 driveway present within 300 feet of WL-LTZ-078.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	Optimal					Suboptimal									Poor					
	High Optimal: No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass, multiflora rose.

	Condition Category																			
b. Vegetation Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Deer exclusion fencing.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.86**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/29/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783692°	-77.708023°	WL-LTZ-079

General Comments: Wetland is a hillside seep that partially drains to Spring Creek, S-LTZ-043-PER, and S-LTZ-046-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	55%	20%	5%		15%	5%	**Total Score:**	**0.69**
	Score:	18	14	9		4	1		
	Total Sub-score:	9.90	2.80	0.45	0.00	0.60	0.05	**13.80**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 2 driveways present within 100 feet of WL-LTZ-079.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: 2 driveways present within 300 feet of WL-LTZ-079.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, reed canarygrass, multiflora rose, Japanese barberry.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush cutting.

a. Invasive Sub-Score:	3	**Total Score**	**0.50**
b. Vegetation Sub-Score:	17	**20**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Deer exclusion fencing, dewatering (culverts), stormwater inputs, microtopographical alterations, stream alteration.

Score:	**8**	**0.40**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment from roadway, active selective forest harvesting, eroding banks.

Score:	**13**	**0.65**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: minor trash observed.

a. Eutrophication Score	19	**Total Score:**	**0.85**
b. Contaminant Score	15	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.65**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783144°	-77.709191°	WL-LTZ-080

General Comments: WL-LTZ-080 is a disturbed hillside/headwater seep along a gravel road.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	25%	10%	10%		5%	**Total Score:**	
	Score:	18	14	9	7		1		**0.71**
	Total Sub-score:	9.00	3.50	0.90	0.70	0.00	0.05	**14.15**	

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-080.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: One gravel road present within 300 feet of WL-LTZ-080.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush clearing

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	17	**20**

0.50

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, road, grading.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Gravel/sediment runoff from road berm.

Score:	**16**

0.80

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.72**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/30/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.785158°	-77.710966°	WL-LTZ-081

General Comments: WL-LTZ-081 is a floodplain bench along the headwaters of Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	5%	5%		40%	40%	5%	**Total Score:**	
	Score:	18	14		7	4	1		**0.30**
	Total Sub-score:	0.90	0.70	0.00	2.80	1.60	0.05	**6.05**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-081.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One gravel road present within 300 feet of WL-LTZ-081.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	19	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culvert.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.70**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.784938°	-77.711687°	WL-LTZ-082

General Comments: WL-LTZ-082 is a large hillside/headwater seep connected to a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	5%	10%		60%	20%	5%	**Total Score:**	
	Score:	18	14		7	4	1		**0.37**
	Total Sub-score:	0.90	1.40	0.00	4.20	0.80	0.05	**7.35**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-082.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One gravel road present within 300 feet of WL-LTZ-082.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush clearing

a. Invasive Sub-Score:	4	**Total Score**	**0.53**
b. Vegetation Sub-Score:	17	**21**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, pond.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algal mats.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**	**0.85**
b. Contaminant Score	19	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/30/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.784357°	-77.711632°	WL-LTZ-082-POW

General Comments: WL-LTZ-082-POW is a man-made pond connected to WL-LTZ-082.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	15%		70%		5%	**Total Score:**	**0.44**
	Score:	18	14		7		1		
	Total Sub-score:	1.80	2.10	0.00	4.90	0.00	0.05	**8.85**	

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-082-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One gravel road present within 300 feet of WL-LTZ-082-POW.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass around fringe.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Brush clearing around fringe.

a. Invasive Sub-Score:	15	**Total Score**	**0.80**
b. Vegetation Sub-Score:	17	**32**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Pond (grading, excavation, berm), stormwater inputs.

Score:	**9**	**0.45**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Eroding slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Algae.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.785575°	-77.711631°	WL-LTZ-083

General Comments: WL-LTZ-083 is a floodplain bench along the headwaters of Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	5%	5%		75%	5%	10%	**Total Score:**	**0.36**
	Score:	18	14		7	4	1		
	Total Sub-score:	0.90	0.70	0.00	5.25	0.20	0.10	**7.15**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road present within 100 feet of WL-LTZ-083.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: One gravel road and one 2-lane road present within 300 feet of WL-LTZ-083.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush clearing

a. Invasive Sub-Score:	6	**Total Score**
b. Vegetation Sub-Score:	17	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culvert.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.71**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783550°	-77.710123°	WL-LTZ-084

General Comments: WL-LTZ-084 is a large hillside/headwater seep..

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	10%	10%	55%		5%	**Total Score:**	
	Score:	18	14	9	7		1		**0.49**
	Total Sub-score:	3.60	1.40	0.90	3.85	0.00	0.05	**9.80**	

Comments: 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road and one driveway present within 100 feet of WL-LTZ-084.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* **(0.67)**	10	
b. Roadbed 100-300:	15	* **(0.33)**	5	**0.75**
		Total Score:	**15**	

Comments: One gravel road and one driveway present within 300 feet of WL-LTZ-084.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush clearing

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	17	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culvert, road.

Score:	**13**

0.65

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.72

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782918°	-77.712532°	WL-LTZ-085

General Comments: WL-LTZ-085 is a large hillside/headwater seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	30%		15%	5%		**Total Score:**	
	Score:	18	14		7	4			**0.72**
	Total Sub-score:	9.00	4.20	0.00	1.05	0.20	0.00	**14.45**	

Comments: 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-085.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: No roads present within 300 feet of WL-LTZ-085.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass, Barberry, Autumn olive

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Brush clearing

a. Invasive Sub-Score:	6	**Total Score**
b. Vegetation Sub-Score:	17	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.79**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/05/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.784786°	-77.708246°	WL-LTZ-086

General Comments: Wetland is a small floodplain bench of S-LTZ-043-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	60%	20%		5%	10%	5%	**Total Score:**	
	Score:	18	14		7	4	1		**0.72**
	Total Sub-score:	10.80	2.80	0.00	0.35	0.40	0.05	**14.40**	

Comments: 1 = roadways

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-LTZ-086.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-086.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Sediment deposits, eroding banks.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786724°	-77.708782°	WL-LTZ-087

General Comments: WL-LTZ-087 is a large hillside/headwater seep that drains to a field.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	10%			50%	15%	**Total Score:**	
	Score:	18	14			4	1		**0.40**
	Total Sub-score:	4.50	1.40	0.00	0.00	2.00	0.15	**8.05**	

Comments: 1 = impervious areas; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road/parking area present within 100 feet of WL-LTZ-087.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One gravel road/parking area present within 100 feet of WL-LTZ-087.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing, brush clearing.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	14	**19**

0.48

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algal mats.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**
b. Contaminant Score	19	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.785045°	-77.710522°	WL-LTZ-088

General Comments: WL-LTZ-088 is a mesic wetland in a mowed field.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	5%		45%	40%	5%	Total Score:
	Score:	18	14		7	4	1	0.32
	Total Sub-score:	0.90	0.70	0.00	3.15	1.60	0.05	6.40

Comments: 1 = roads; 4 = mowed/maintained areas.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: One gravel road present within 100 feet of WL-LTZ-088.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	0.85
		Total Score:	17	

Comments: One gravel road present within 300 feet of WL-LTZ-088.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing, brush removal.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	14	**17**

0.43

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/26/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778264°	-77.724984°	WL-LTZ-089

General Comments: Wetland is a hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category										CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6		5 4 3 2 1				

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	10%		5%	20%	15%	**Total Score:**
	Score:	18	14		7	4	1	**0.59**
	Total Sub-score:	9.00	1.40	0.00	0.35	0.80	0.15	**11.70**

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories										
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	High Optimal: No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.			
SCORE	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6		5 4 3 2 1				

Comments: 1 driveway present within 100 feet of WL-LTZ-089.

	Condition Categories										CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.			
SCORE	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6		5 4 3 2 1				

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: 2 driveways present within 300 feet of WL-LTZ-089.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Mowing.

a. Invasive Sub-Score:	14	**Total Score**	**0.78**
b. Vegetation Sub-Score:	17	**31**	

4. Hydrologic Modification Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.70**

Comments: Dewatering methods, stormwater input.

Score:	**14**

5. Sediment Stressor Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.95**

Comments: No sediment stressors observed.

Score:	**19**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Moderate algal mats.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No contaminant stressors observed.

a. Eutrophication Score	15	**Total Score:**	**0.85**
b. Contaminant Score	19	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780594°	-77.721200°	WL-LTZ-090

General Comments: WL-LTZ-090 is a hillside seep wetland that drains to S-LTZ-051-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-090.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-090.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Sediment/debris deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.92**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	04/20/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783637°	-77.713435°	WL-LTZ-091

General Comments: Wetland is a small floodplain bench along S-LTZ-045-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	15%		10%	25%	5%	**Total Score:**	**0.60**
	Score:	18	14		7	4	1		
	Total Sub-score:	8.10	2.10	0.00	0.70	1.00	0.05	**11.95**	

Comments: 1 = roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-LTZ-091.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-091.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks, sediment deposits.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.79**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.778710°	-77.721392°	WL-LTZ-092

General Comments: WL-LTZ-092 is a hillside/headwater seep that drains to a POW system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	30%			15%	10%	**Total Score:**	**0.65**
	Score:	18	14			4	1		
	Total Sub-score:	8.10	4.20	0.00	0.00	0.60	0.10	**13.00**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway present within 100 feet of WL-LTZ-092.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-092.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, Reed canarygrass, Barberry.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, microtopographic alterations.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.778861°	-77.721940°	WL-LTZ-092-POW

General Comments: WL-LTZ-092-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	30%			15%	10%	**Total Score:**	**0.65**
	Score:	18	14			4	1		
	Total Sub-score:	8.10	4.20	0.00	0.00	0.60	0.10	**13.00**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-092-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-092-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasives observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond (grading, excavation, berm), microtopographic alterations.

Score:	**9**	**0.45**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algae.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779313°	-77.722694°	WL-LTZ-093

General Comments: WL-LTZ-093 is a hillside/headwater seep that drains S-LTZ-054-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	45%	40%			10%	5%	**Total Score:**	**0.71**
	Score:	18	14			4	1		
	Total Sub-score:	8.10	5.60	0.00	0.00	0.40	0.05	**14.15**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-093.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One driveway present within 300 feet of WL-LTZ-092.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, Reed canarygrass, Autumn olive.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, microtopographic alterations, upgradient pond

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779167°	-77.722844°	WL-LTZ-094

General Comments: WL-LTZ-094 is a hillside/headwater seep that drains S-LTZ-054-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	40%			15%	5%	**Total Score:**	**0.67**
	Score:	18	14			4	1		
	Total Sub-score:	7.20	5.60	0.00	0.00	0.60	0.05	**13.45**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-094.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One driveway present within 300 feet of WL-LTZ-094.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No listed invasives observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.86**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/03/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778868°	-77.722541°	WL-LTZ-095

General Comments: Wetland is a floodplain bench of S-LTZ-054-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	20%		10%	10%	10%	**Total Score:**	**0.65**
	Score:	18	14		7	4	1		
	Total Sub-score:	9.00	2.80	0.00	0.70	0.40	0.10	**13.00**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-095.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-095.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, autumn olive, Japanese stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778551°	-77.722678°	WL-LTZ-096

General Comments: Wetland is a hillside seep that S-LTZ-055-PER drains from.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	35%	15%		20%	15%	15%	Total Score:
	Score:	18	14		7	4	1	
	Total Sub-score:	6.30	2.10	0.00	1.40	0.60	0.15	10.55

0.53

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: 1 driveway present within 100 feet of WL-LTZ-096.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	17

0.85

Comments: 1 driveway present within 300 feet of WL-LTZ-096.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

Comments: Mowing.

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**17**	**0.85**

Comments: Stream alteration.

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**19**	**0.95**

Comments: No sediment stressors observed.

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Comments: No contaminant stressors observed.

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778636°	-77.722995°	WL-LTZ-097

General Comments: Wetland is a hillside seep that S-LTZ-056-PER drains from.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	15%		15%	15%	15%	Total Score:
	Score:	18	14		7	4	1	0.56
	Total Sub-score:	7.20	2.10	0.00	1.05	0.60	0.15	11.10

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: 1 driveway present within 100 feet of WL-LTZ-096.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	0.85
		Total Score:	17	

Comments: 1 driveway present within 300 feet of WL-LTZ-096.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

Comments: Mowing.

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**17**	**0.85**

Comments: Stream alteration.

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**19**	**0.95**

Comments: No sediment stressors observed.

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Comments: No contaminant stressors observed.

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778872°	-77.724348°	WL-LTZ-098

General Comments: Wetland is a hillside seep that S-LTZ-058-PER and S-LTZ-059-PER drain from.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	15%		15%	20%	10%	**Total Score:**	**0.56**
	Score:	18	14		7	4	1		
	Total Sub-score:	7.20	2.10	0.00	1.05	0.80	0.10	**11.25**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway present within 100 feet of WL-LTZ-098.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	**17**	

Comments: 2 driveways present within 300 feet of WL-LTZ-098.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Mowing.

a. Invasive Sub-Score:	11	**Total Score**	**0.70**
b. Vegetation Sub-Score:	17	**28**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Stream alteration, dewatering methods, stormwater input.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.779904°	-77.723747°	WL-LTZ-099

General Comments: Wetland is a small floodplain bench along S-LTZ-060-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	25%			20%	5%	**Total Score:**	**0.67**
	Score:	18	14			4	1		
	Total Sub-score:	9.00	3.50	0.00	0.00	0.80	0.05	**13.35**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-LTZ-099.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-099.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stream alteration.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780289°	-77.725197°	WL-LTZ-100

General Comments: Wetland is a hillside seep that S-LTZ-062-INT drains from.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	15%	5%	5%	20%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	9.00	2.10	0.45	0.35	0.80	0.05	**12.75**

0.64

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-100.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	**17**

0.87

Comments: 1 single lane paved road, 2 driveways present within 300 feet of WL-LTZ-100.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	17	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.780541°	-77.724223°	WL-LTZ-101

General Comments: Wetland is a hillside seep that S-LTZ-063-INT drains from.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	55%	15%		5%	20%	5%	**Total Score:**	**0.66**
	Score:	18	14		7	4	1		
	Total Sub-score:	9.90	2.10	0.00	0.35	0.80	0.05	**13.20**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-101.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-101.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Mowing.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	17	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Microtopographical alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.83**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/04/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.779342°	-77.723593°	WL-LTZ-102

General Comments: Wetland is a floodplain bench of S-LTZ-060-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%	30%		5%	10%	5%	Total Score:
	Score:	18	14		7	4	1	
	Total Sub-score:	9.00	4.20	0.00	0.35	0.40	0.05	14.00

0.70

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: 1 driveway present within 100 feet of WL-LTZ-102.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	17

0.85

Comments: 1 driveway present within 300 feet of WL-LTZ-100.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species were present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs, stream alteration.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.81**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.787954°	-77.712093°	WL-LTZ-103-POW

General Comments: Wetland is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category										
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**	**Suboptimal**		**Marginal**		**Poor**					**CI = Total Score/20**
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**					

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%			15%	60%	20%	**Total Score:**
	Score:	18			7	4	1	**0.23**
	Total Sub-score:	0.90	0.00	0.00	1.05	2.40	0.20	**4.55**

Comments: 1 = roadways/buildings, 4 = mowed areas/nurseries

2. Roadbed Presence Index

	Condition Categories										
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				
	High Optimal: No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**				

Comments: 1 two lane paved road, 2 gravel roads present within 100 feet of WL-LTZ-103-POW.

	Condition Categories										
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**				**CI = Total Score/20**
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.			
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**				

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	*** (0.67)**	9	
b. Roadbed 100-300:	7	*** (0.33)**	2	**0.55**
		Total Score:	**11**	

Comments: 1 two lane paved road, 1 single laned paved road, 2 gravel roads, 4 driveways/parking lots present within 300 feet of WL-LTZ-103-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowed around fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging/excavation, grading, dike/weir/dam.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algae.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.66**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.786555°	-77.697741°	WL-LTZ-104

General Comments: Wetland is a mesic/farmland wetland that becomes a floodplain bench on the northern side of the road.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	15%	5%	5%	25%	40%	10%	Total Score:
	Score:	18	14	9	7	4	1	
	Total Sub-score:	2.70	0.70	0.45	1.75	1.60	0.10	7.30

0.37

Comments: 1 = buildings/roads, 4 = mowed/plowed areas, pasture

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: 1 one-lane paved road, 1 driveway present within 100 feet of WL-LTZ-104.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	16	* (0.67)	11
b. Roadbed 100-300:	12	* (0.33)	4
		Total Score:	15

0.73

Comments: 1 one-lane paved road, 4 driveways present within 300 feet of WL-LTZ-104.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

a. Invasive Sub-Score:	6	**Total Score**	**0.58**
b. Vegetation Sub-Score:	17	**23**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stormwater inputs.

Score:	**17**

CI = Total Score/20

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	**19**

CI = Total Score/20

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778283°	-77.72600°	WL-LTZ-105

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	65%	15%			10%	10%	**Total Score:**	**0.72**
	Score:	18	14			4	1		
	Total Sub-score:	11.70	2.10	0.00	0.00	0.40	0.10	**14.30**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-105.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-105.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/10/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778078°	-77.726280°	WL-LTZ-106

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	20%			5%	5%	**Total Score:**	**0.78**
	Score:	18	14			4	1		
	Total Sub-score:	12.60	2.80	0.00	0.00	0.20	0.05	**15.65**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-106.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-106.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass, Japanese barberry.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	3	**Total Score**	**0.55**
b. Vegetation Sub-Score:	19	**22**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.85**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783713°	-77.695728°	WL-LTZ-107

General Comments: Wetland is a floodplain bench of Sleepy Creek (S-LTZ-025-PER) and S-LTZ-061-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	20%	10%			20%	**Total Score:**	**0.65**
	Score:	18	14	9			1		
	Total Sub-score:	9.00	2.80	0.90	0.00	0.00	0.20	**12.90**	

Comments: 1 = buildings/roads, row crops

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-107.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	16	* (0.33)	5	**0.90**
		Total Score:	**18**	

Comments: 2 driveways present within 300 feet of WL-LTZ-107.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	19	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.83

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/16/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795028°	-77.645921°	WL-LTZ-108

General Comments: WL-LTZ-108 is a large floodplain system located along S-BPH-001-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	15%	10%	10%	55%	5%	5%	**Total Score:**
	Score:	18	14	7	4	2	1	
	Total Sub-score:	2.70	1.40	0.70	2.20	0.10	0.05	**7.15**

0.36

Comments: 1 = roads; 2 = row crops; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway and one two-lane road present within 100 feet of WL-LTZ-108.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	14	* (0.67)	9
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	**14**

0.70

Comments: One driveway and one two-lane road present within 100 feet of WL-LTZ-108.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, Autumn olive

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: Portions of the wetland are mowed.

a. Invasive Sub-Score:	11	**Total Score**	**0.70**
b. Vegetation Sub-Score:	17	**28**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Driveway culvert, microtopographic alterations.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/14/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.795620°	-77.644885°	WL-LTZ-109

General Comments: WL-LTZ-109 is a large floodplain system located along S-BPH-001-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	10%	10%	60%		5%	**Total Score:**	
	Score:	18	14	7	4		1		**0.36**
	Total Sub-score:	2.70	1.40	0.70	2.40	0.00	0.05	**7.25**	

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Three driveways and one two-lane road present within 100 feet of WL-LTZ-109.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	12	* (0.67)	8	
b. Roadbed 100-300:	11	* (0.33)	4	**0.58**
		Total Score:	**12**	

Comments: Four driveways and one two-lane road present within 300 feet of WL-LTZ-109.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Multiflora rose

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Portions of the wetland are mowed.

a. Invasive Sub-Score:	15	**Total Score**
b. Vegetation Sub-Score:	17	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Culverts, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	01/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.799748°	-77.645817°	WL-LTZ-110

General Comments: WL-LTZ-110 is a large floodplain system abutting Sinking Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	50%		5%	5%	30%	10%	**Total Score:**
	Score:	18		9	7	4	1	**0.56**
	Total Sub-score:	9.00	0.00	0.45	0.35	1.20	0.10	**11.10**

Comments: 4 = mowed areas; 1 = roads.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One 2-lane road present within 100 feet of WL-LTZ-110.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	12	* (0.33)	4	**0.77**
		Total Score:	**15**	

Comments: Two 2-lane roads and one driveway present within 300 feet of WL-LTZ-110.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors.

a. Invasive Sub-Score:	16	**Total Score**	**0.88**
b. Vegetation Sub-Score:	19	**35**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Presence of road (Mountain Back Road).

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780808°	-77.722173°	WL-LTZ-112

General Comments: WL-LTZ-112 is a small floodplain bench wetland along S-LTZ-050-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-112, but wetland located on a path/defunct logging road.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	18	* (0.67)	12	
b. Roadbed 100-300:	18	* (0.33)	6	**0.90**
		Total Score:	**18**	

Comments: No roads present within 300 feet of WL-LTZ-112, but wetland located on a path/defunct logging road.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Logging and removal of woody debris.

a. Invasive Sub-Score:	10	**Total Score**
b. Vegetation Sub-Score:	14	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/31/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.776009°	-77.732031°	WL-LTZ-113

General Comments: WL-LTZ-113 is a hillside seep wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-113.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-113.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrology stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.87**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/31/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.776951°	-77.732447°	WL-LTZ-114

General Comments: WL-LTZ-114 is a small floodplain bench wetland along S-CML-009-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	30%		15%		5%	**Total Score:**	**0.69**
	Score:	18	14		4		1		
	Total Sub-score:	9.00	4.20	0.00	0.60	0.00	0.05	**13.85**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-114.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One 1-lane road present within 300 feet of WL-LTZ-114.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrology stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	05/31/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.776480°	-77.732188°	WL-LTZ-115

General Comments: WL-LTZ-115 is a hillside seep wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-115.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roads present within 300 feet of WL-LTZ-115.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrology stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.87**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781620°	-77.719789°	WL-LTZ-116

General Comments: WL-LTZ-116 is a hillside seep wetland connected to a POW system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	60%	25%			14%	1%	**Total Score:**	**0.74**
	Score:	18	14			4	1		
	Total Sub-score:	10.80	3.50	0.00	0.00	0.56	0.01	**14.87**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-116.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One driveway present within 300 feet of WL-LTZ-116.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass, Reed canarygrass, Redtop.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: A portion of the wetland is mowed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, pond.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.79**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.7820456°	-77.718980°	WL-LTZ-116-POW

General Comments: WL-LTZ-116-POW is a man-made pond in the WL-LTZ-116 system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	15%			50%	5%	**Total Score:**	**0.48**
	Score:	18	14			4	1		
	Total Sub-score:	5.40	2.10	0.00	0.00	2.00	0.05	**9.55**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two driveways present within 100 feet of WL-LTZ-116-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* **(0.67)**	10	
b. Roadbed 100-300:	14	* **(0.33)**	5	**0.73**
		Total Score:	**15**	

Comments: Three driveways present within 300 feet of WL-LTZ-116-POW.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Phragmites, Reed canarygrass, Redtop.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	10	**Total Score**	**0.68**
b. Vegetation Sub-Score:	17	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond (grading, berm, excavation).

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780139°	-77.718667°	WL-LTZ-117

General Comments: WL-LTZ-117 is a hillside seep wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-117.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-117.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	5	**Total Score**
b. Vegetation Sub-Score:	19	**24**

CI = Total Score/40: **0.60**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	**19**

CI = Total Score/20: **0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Eroding banks/slope.

Score:	**17**

CI = Total Score/20: **0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

CI = Total Score/40: **0.95**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.86**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780759°	-77.719975°	WL-LTZ-118

General Comments: WL-LTZ-118 is a hillside seep wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	70%	30%					**Total Score:**	**0.84**
	Score:	18	14						
	Total Sub-score:	12.60	4.20	0.00	0.00	0.00	0.00	**16.80**	

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-118.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-118.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**16**

0.80

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.91**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782001°	-77.720317°	WL-LTZ-119-POW

General Comments: WL-LTZ-119-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%			55%	5%	**Total Score:**	
	Score:	18	14			4	1		**0.45**
	Total Sub-score:	5.40	1.40	0.00	0.00	2.20	0.05	**9.05**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-119-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	15	* **(0.33)**	5	**0.88**
		Total Score:	**18**	

Comments: Two driveways present within 300 feet of WL-LTZ-119-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond (grading, berm, excavation).

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.76**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781979°	-77.720669°	WL-LTZ-120

General Comments: WL-LTZ-120 is a small floodplain bench along S-LTZ-065-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	20%			45%	5%	**Total Score:**	**0.50**
	Score:	18	14			4	1		
	Total Sub-score:	5.40	2.80	0.00	0.00	1.80	0.05	**10.05**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-120.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	15	* (0.33)	5	**0.88**
		Total Score:	**18**	

Comments: Two driveways present within 300 feet of WL-LTZ-120.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	17	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783464°	-77.721881°	WL-LTZ-121-POW

General Comments: WL-LTZ-121-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	15%			60%	5%	**Total Score:**	**0.41**
	Score:	18	14			4	1		
	Total Sub-score:	3.60	2.10	0.00	0.00	2.40	0.05	**8.15**	

Comments: 1 = roads and buildings; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-121.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-121.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass around pond fringe.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	17	**30**

0.75

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond (grading, berm, excavation).

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783678°	-77.722390°	WL-LTZ-122

General Comments: WL-LTZ-122 is a small depressional system adjacent to WL-LTZ-121-POW.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	15%			55%	5%	**Total Score:**	**0.44**
	Score:	18	14			4	1		
	Total Sub-score:	4.50	2.10	0.00	0.00	2.20	0.05	**8.85**	

Comments: 1 = roads and buildings; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-122.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-122.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Redtop.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	17	**30**

0.75

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.77**

Wetland Condition Assessment Form

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.783858°	-77.722883°	WL-LTZ-123

General Comments: WL-LTZ-123 is a small floodplain bench along S-LTZ-065-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	15%			45%	5%	**Total Score:**	
	Score:	18	14			4	1		**0.51**
	Total Sub-score:	6.30	2.10	0.00	0.00	1.80	0.05	**10.25**	

Comments: 1 = roads and buildings; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-123.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-123.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.77**

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Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.784130°	-77.723221°	WL-LTZ-124

General Comments: WL-LTZ-124 is a small floodplain bench along S-LTZ-065-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	35%	15%			45%	5%	**Total Score:**	
	Score:	18	14			4	1		**0.51**
	Total Sub-score:	6.30	2.10	0.00	0.00	1.80	0.05	**10.25**	

Comments: 1 = roads and buildings; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-124.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-124.

Wetland Condition Assessment Form

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Redtop, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors.

a. Invasive Sub-Score:	6	**Total Score**
b. Vegetation Sub-Score:	19	**25**

0.63

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.79**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781448°	-77.717155°	WL-LTZ-125-POW

General Comments: WL-LTZ-125-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	10%		15%	55%	5%	**Total Score:**	**0.29**
	Score:	18	14		4	2	1		
	Total Sub-score:	2.70	1.40	0.00	0.60	1.10	0.05	**5.85**	

Comments: 1 = roads and buildings; 2 = denuded areas; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-125-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-125-POW.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing/maintenance around fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Pond (grading, berm, excavation).

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks, turbidity.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781273°	-77.716748°	WL-LTZ-126-POW

General Comments: WL-LTZ-126-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
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Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
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1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
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Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	10%		15%	55%	5%	**Total Score:**	**0.29**
	Score:	18	14		4	2	1		
	Total Sub-score:	2.70	1.40	0.00	0.60	1.10	0.05	**5.85**	

Comments: 1 = roads and buildings; 2 = denuded areas; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One driveway present within 100 feet of WL-LTZ-126-POW.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-126-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing/maintenance around fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Pond (grading, berm, excavation).

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks, turbidity.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780814°	-77.717332°	WL-LTZ-127

General Comments: WL-LTZ-127 is a small depressional system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	35%		5%	15%	5%	**Total Score:**	**0.63**
	Score:	18	14		4	2	1		
	Total Sub-score:	7.20	4.90	0.00	0.20	0.30	0.05	**12.65**	

Comments: 1 = roads and buildings; 2 = denuded areas; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-127.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One driveway present within 300 feet of WL-LTZ-127.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Grading, microtopographic alterations.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Eroding slope, sediment deposits.

Score:	**14**	**0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781531°	-77.718426°	WL-LTZ-128

General Comments: WL-LTZ-128 is a small floodplain bench along S-LTZ-067-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	55%	30%			10%	5%	**Total Score:**	**0.72**
	Score:	18	14			2	1		
	Total Sub-score:	9.90	4.20	0.00	0.00	0.20	0.05	**14.35**	

Comments: 1 = roads and buildings; 2 = denuded areas; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-128.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: One driveway present within 300 feet of WL-LTZ-128.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope, sediment deposits.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/15/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.781735°	-77.718561°	WL-LTZ-129

General Comments: WL-LTZ-129 is a hillside/headwater seep wetland with POW components.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	25%		10%	10%	5%	**Total Score:**	**0.66**
	Score:	18	14		4	2	1		
	Total Sub-score:	9.00	3.50	0.00	0.40	0.20	0.05	**13.15**	

Comments: 1 = roads and buildings; 2 = denuded areas; 4 = mowed and grazed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-129.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: Two driveways present within 300 feet of WL-LTZ-129.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond, microtopographic alterations.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope, sediment deposits.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/20/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.782417°	-77.719833°	WL-LTZ-130

General Comments: WL-LTZ-130 is a hillside/headwater seep wetland in a mowed area.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	5%			80%	5%	**Total Score:**	
	Score:	18	14			4	1		**0.29**
	Total Sub-score:	1.80	0.70	0.00	0.00	3.20	0.05	**5.75**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two driveways present within 100 feet of WL-LTZ-130.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* **(0.67)**	10	
b. Roadbed 100-300:	15	* **(0.33)**	5	**0.75**
		Total Score:	**15**	

Comments: Two driveways present within 300 feet of WL-LTZ-130.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	16	**25**

0.63

Comments: Mowing.

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**14**

0.70

Comments: Microtopographic alterations, grading.

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Score:	**19**

0.95

Comments: No sediment stressors observed.

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Comments: No contaminant stressors observed.

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/20/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.786811°	-77.725285°	WL-LTZ-131

General Comments: WL-LTZ-131 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		10%	10%	5%	75%		**Total Score:**	
	Score:		14	9	7	2			**0.21**
	Total Sub-score:	0.00	1.40	0.90	0.35	1.50	0.00	**4.15**	

Comments: 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane present within 100 feet of WL-LTZ-131.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One farm lane present within 300 feet of WL-LTZ-131.

Wetland Condition Assessment Form

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Ag along fringe.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	17	**19**

0.48

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.67**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	06/27/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie	40.798379°	-77.670742°	WL-LTZ-132

General Comments: WL-LTZ-132 is a large system in the floodplain of Sinking Creek. The wetland has PEM and PSS components.

1. Wetland Zone of Influence Condition Index

	Condition Category										
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**	**Suboptimal**		**Marginal**		**Poor**		CI = Total Score/20
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	15%	30%	15%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.46**
	Total Sub-score:	3.60	1.40	1.35	2.10	0.60	0.10	**9.15**

Comments: 1 = roads/buildings, 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories										
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**			
	High Optimal: No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

Comments: 1 two lane paved road, 3 one -ane paved roads, 2 gravel roads, 7 driveways/parking lots present within 100 feet of WL-LTZ-132.

	Condition Categories										
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**			
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	2	* (0.67)	1	
b. Roadbed 100-300:	1	* (0.33)	0	**0.08**
		Total Score:	**2**	

Comments: 1 two-lane paved road, 5 one-lane paved roads, 2 gravel roads, 11 driveways/parking lots present within 300 feet of WL-LTZ-132.

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, Russian olive.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	11	**Total Score**	**0.75**
b. Vegetation Sub-Score:	19	**30**	

4. Hydrologic Modification Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.70**

Comments: Microtopographic alterations, stream alteration.

Score:	**14**		

5. Sediment Stressor Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.95**

Comments: No sediment stressors observed.

Score:	**19**		

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No eutrophication stressors observed.

	Condition Category																				CI = Total Score/40
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.65**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.775274°	-77.740882°	WL-LTZ-133

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	10%		20%	25%	5%	**Total Score:**	**0.55**
	Score:	18	14		7	4	1		
	Total Sub-score:	7.20	1.40	0.00	1.40	1.00	0.05	**11.05**	

Comments: 1 = buildings/roads, 4 = mowed areas/tree farm

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-133.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-133.

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No hydrologic stressors.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.87**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776898°	-77.742151°	WL-LTZ-134

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	10%		20%	50%	5%	**Total Score:**	**0.38**
	Score:	18	14		7	4	1		
	Total Sub-score:	2.70	1.40	0.00	1.40	2.00	0.05	**7.55**	

Comments: 1 = buildings/roads, 4 = mowed areas/tree farm

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 1 driveway present within 100 feet of WL-LTZ-134.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: 1 driveway and 2 farm lanes present within 300 feet of WL-LTZ-134.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	11	**Total Score**
b. Vegetation Sub-Score:	19	**30**

CI = Total Score/40: **0.75**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors.

Score:	**19**

CI = Total Score/20: **0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors.

Score:	**19**

CI = Total Score/20: **0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

CI = Total Score/40: **0.95**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.80**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.775701	-77.740195	WL-LTZ-135

General Comments: Wetland is a small hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	10%		20%	25%	5%	**Total Score:**	**0.55**
	Score:	18	14		7	4	1		
	Total Sub-score:	7.20	1.40	0.00	1.40	1.00	0.05	**11.05**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-135.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-135.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

CI = Total Score/40: **0.65**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors.

Score:	**19**

CI = Total Score/20: **0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors.

Score:	**19**

CI = Total Score/20: **0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

CI = Total Score/40: **0.95**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.83**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778238°	-77.741637°	WL-LTZ-136

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	15%		10%	50%	15%	Total Score:
	Score:	18	14		7	4	1	
	Total Sub-score:	1.80	2.10	0.00	0.70	2.00	0.15	6.75

0.34

Comments: 1 = buildings/roads, 4 = mowed areas/tree farm

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: 1 farm lane present within 100 feet of WL-LTZ-136.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	13	* (0.33)	4
		Total Score:	16

0.78

Comments: 4 farm lanes present within 300 feet of WL-LTZ-136.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.80**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.779777°	-77.741963°	WL-LTZ-137-POW

General Comments: Wetland is a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%		25%	40%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.34**
	Total Sub-score:	1.80	1.40	0.00	1.75	1.60	0.15	**6.70**	

Comments: 1 = buildings/roads, 4 = mowed areas/tree farm

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 1 two lane paved road, 1 farm lane present within 100 feet of WL-LTZ-137.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	11	* (0.33)	4	**0.65**
		Total Score:	**13**	

Comments: 1 two lane paved road, 1 gravel road, 3 farm lanes present within 100 feet of WL-LTZ-137.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	19	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Dredging, Stormwater inputs.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Algal mats.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.71

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778235	-77.742372	WL-LTZ-138

General Comments: Wetland is a small floodplain bench.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	5%	10%	50%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.41**
	Total Sub-score:	3.60	1.40	0.45	0.70	2.00	0.05	**8.20**

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 gravel road and 1 farm lane present within 100 feet of WL-LTZ-138.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: 1 gravel road, 2 farm lanes present within 300 feet of WL-LTZ-138.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	19	**26**

0.65

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.775809°	-77.744848°	WL-LTZ-139

General Comments: Wetland is a small hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	15%	5%		55%		**Total Score:**	**0.46**
	Score:	18	14	9		4			
	Total Sub-score:	4.50	2.10	0.45	0.00	2.20	0.00	**9.25**	

Comments: 4 = mowed areas/tree farm

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-139.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-139.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Multiflora rose, stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.82**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.775860°	-77.751262°	WL-LTZ-140

General Comments: Wetland is a large floodplain system associated with S-LTZ-075-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	10%	10%	10%	45%		Total Score:
	Score:	18	14	9	7	4		0.47
	Total Sub-score:	4.50	1.40	0.90	0.70	1.80	0.00	9.30

Comments: 4 = mowed areas/grazed pasture

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: No roadways present within 100 feet of WL-LTZ-139.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	0.95
		Total Score:	19	

Comments: No roadways present within 300 feet of WL-LTZ-139.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Multiflora rose, reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	17	**30**

0.75

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stream alteration.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from pasture.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.75**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776820°	-77.750850°	WL-LTZ-141

General Comments: Wetland is a small floodplain bench along with S-LTZ-075-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	20%	20%	10%	30%		**Total Score:**	
	Score:	18	14	9	7	4			**0.51**
	Total Sub-score:	3.60	2.80	1.80	0.70	1.20	0.00	**10.10**	

Comments: 4 = mowed areas/grazed pasture

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-141.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-141.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Livestock grazing.

a. Invasive Sub-Score:	7	**Total Score**	**0.60**
b. Vegetation Sub-Score:	17	**24**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from pasture.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776542°	-77.749763°	WL-LTZ-142

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	10%	10%	10%	10%	60%		**Total Score:**	
	Score:	18	14	9	7	4			**0.36**
	Total Sub-score:	1.80	1.40	0.90	0.70	2.40	0.00	**7.20**	

Comments: 4 = mowed areas/grazed pasture

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-142.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	19	* (0.33)	6	**0.95**
		Total Score:	**19**	

Comments: No roadways present within 300 feet of WL-LTZ-142.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Livestock grazing.

a. Invasive Sub-Score:	11	**Total Score**	**0.70**
b. Vegetation Sub-Score:	17	**28**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No hydrologic stressors.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment stressors.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Manure from pasture.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/17/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778835°	-77.750846°	WL-LTZ-143

General Comments: Wetland is a large floodplain system associated with S-LTZ-075-PER and S-LTZ-073-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	15%	15%	15%	25%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.46**
	Total Sub-score:	3.60	2.10	1.35	1.05	1.00	0.10	**9.20**

Comments: 1 = buildings and roads, 4 = mowed areas/grazed pasture

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 two lane paved road, 1 one lane paved road, 1 driveway present within 100 feet of WL-LTZ-143.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	12	* (0.33)	4	**0.63**
		Total Score:	**13**	

Comments: 1 two lane paved road, 1 one lane paved road, 2 drivewasy present within 300 feet of WL-LTZ-143

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetative stressors observed.

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	19	**22**

0.55

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs, dead or dying trees, stream alteration.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.67**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777010°	-77.758086°	WL-LTZ-144

General Comments: Wetland is a small hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	15%	20%	30%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.45**
	Total Sub-score:	3.60	1.40	1.35	1.40	1.20	0.05	**9.00**

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway present within 100 feet of WL-LTZ-144.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.			**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: 1 driveway, 2 single lane paved roads present within 300 feet of WL-LTZ-144.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	2	**Total Score**
b. Vegetation Sub-Score:	19	**21**

0.53

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777857°	-77.758245°	WL-LTZ-145-PEM

General Comments: Wetland is an isolated depressional wetland that borders a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	15%	15%	10%	10%	40%	10%	**Total Score:**	
	Score:	18	14	9	7	4	1		**0.41**
	Total Sub-score:	2.70	2.10	0.90	0.70	1.60	0.10	**8.10**	

Comments: 1 = roadways, 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 1 driveway, 2 single laned paved roads present within 100 feet of WL-LTZ-145-POW.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: 1 driveway, 2 single laned paved roads present within 300 feet of WL-LTZ-145-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	8	**Total Score**	**0.68**
b. Vegetation Sub-Score:	19	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stormwater inputs.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777307°	-77.757916°	WL-LTZ-145-POW

General Comments: Wetland is a pond system with multiple sections.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	15%	15%	10%	10%	40%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.41**
	Total Sub-score:	2.70	2.10	0.90	0.70	1.60	0.10	**8.10**

Comments: 1 = roadways, 4 = mowed areas/grazed pastures

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway, 2 single laned paved roads present within 100 feet of WL-LTZ-145-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: 1 driveway, 2 single laned paved roads present within 300 feet of WL-LTZ-145-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	16	**Total Score**
b. Vegetation Sub-Score:	19	**35**

0.88

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, dike/weir/dam, dewatering, stormwater inputs.

Score:	**9**

0.45

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algal mats.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.70**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778312°	-77.759202°	WL-LTZ-146-PEM

General Comments: Wetland is an isolated depressional wetland that borders a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	10%	10%	20%	25%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.47**
	Total Sub-score:	4.50	1.40	0.90	1.40	1.00	0.10	**9.30**

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-146-PEM.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	16	* (0.33)	5	**0.90**
		Total Score:	**18**	

Comments: 1 driveway, 1 single laned paved road present within 300 feet of WL-LTZ-146-PEM.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.85**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778596°	-77.759803°	WL-LTZ-146-POW

General Comments: Wetland is a pond system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	15%	10%	10%	30%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.43**
	Total Sub-score:	3.60	2.10	0.90	0.70	1.20	0.15	**8.65**

Comments: 1 = roadways, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 single laned paved road present within 100 feet of WL-LTZ-146-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	6	* (0.33)	2	**0.67**
		Total Score:	**13**	

Comments: 1 four lane paved road, 1 two lane paved road, 1 single laned paved road, 3 driveways present within 300 feet of WL-LTZ-146-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, dewatering, dike/weir/dam.

Score:	**11**

0.55

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algal mats.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.73**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778991°	-77.760962°	WL-LTZ-147-PEM

General Comments: Wetland is a large floodplain system associated with S-LTZ-038-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	10%	10%	20%	25%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.47**
	Total Sub-score:	4.50	1.40	0.90	1.40	1.00	0.10	**9.30**

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 four lane paved road, 2 driveways present within 100 feet of WL-LTZ-147-PEM.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	11	* (0.67)	7	
b. Roadbed 100-300:	3	* (0.33)	1	**0.42**
		Total Score:	**8**	

Comments: 1 four lane paved road, 1 two lane paved road, 1 single laned paved, 5 driveways/golf cart paths present within 300 feet of WL-LTZ-147-PEM.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Mowing.

a. Invasive Sub-Score:	9	**Total Score**	**0.65**
b. Vegetation Sub-Score:	17	**26**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Dewatering, stormwater inputs, stream alterations.

Score:	**12**	**0.60**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Eroding banks.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Trash.

a. Eutrophication Score	19	**Total Score:**	**0.80**
b. Contaminant Score	13	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.63**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/18/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777786°	-77.767700°	WL-LTZ-148

General Comments: Wetland is a large floodplain system associated with Gailbrath Gap Run (S-LTZ-077-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	10%	10%	25%	15%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.51**
	Total Sub-score:	5.40	1.40	0.90	1.75	0.60	0.10	**10.15**

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 two lane road, 1 gravel road, 1 farm lane present within 100 feet of WL-LTZ-148.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	3	* (0.33)	1	**0.49**
		Total Score:	**10**	

Comments: 2 two lane paved roads, 1 gravel road, 7 driveways/farm lanes/parking lots present within 300 feet of WL-LTZ-148.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, autumn olive.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	17	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dike/weir/dam,, stormwater inputs, microtopographical alterations.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777597°	-77.768278°	WL-LTZ-148-POW

General Comments: Wetland is a man-made pond within the WL-LTZ-148 system.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	65%	5%		10%	15%	5%	**Total Score:**	**0.69**
	Score:	18	14		7	4	1		
	Total Sub-score:	11.70	0.70	0.00	0.70	0.60	0.05	**13.75**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roadways present within 100 feet of WL-LTZ-148-POW.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: 1 gravel road, 2 driveways, one parking lot present within 300 feet of WL-LTZ-148-POW.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Dredging, grading, dike/weir/dam.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				CI = Total Score/40
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776431°	-77.769051°	WL-LTZ-149

General Comments: Wetland is a small floodplain bench of Gailbrath Gap Run (S-LTZ-077-PER).

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	5%			35%	10%	**Total Score:**	**0.56**
	Score:	18	14			4	1		
	Total Sub-score:	9.00	0.70	0.00	0.00	1.40	0.10	**11.20**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 farm lane present within 100 feet of WL-LTZ-149.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: 1 gravel road, 3 driveways/farm lanes/parking lots present within 300 feet of WL-LTZ-149.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No invasive species present.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Mowing.

a. Invasive Sub-Score:	12	**Total Score**	**0.73**
b. Vegetation Sub-Score:	17	**29**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	**19**	**0.95**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.776982°	-77.769180°	WL-LTZ-150-PEM

General Comments: Wetland is a depression that fringes a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	5%		10%	20%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.57**
	Total Sub-score:	9.00	0.70	0.00	0.70	0.80	0.15	**11.35**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel lot present within 100 feet of WL-LTZ-150-PEM.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	12	* (0.33)	4	**0.77**
		Total Score:	**15**	

Comments: 1 single laned paved road, 4 driveways/lots present within 300 feet of WL-LTZ-150-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing present.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, grading.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777035°	-77.768983°	WL-LTZ-150-POW

General Comments: Wetland is a pond system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	5%		10%	20%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.57**
	Total Sub-score:	9.00	0.70	0.00	0.70	0.80	0.15	**11.35**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-150-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: 1 single laned paved road, 2 driveways present within 300 feet of WL-LTZ-150-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Dredging, grading, dike/weir/dam.

Score:	**11**	**0.55**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Algae

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**	**0.80**
b. Contaminant Score	19	**32**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.7774309°	-77.769407°	WL-LTZ-151-PEM

General Comments: Wetland is a depression that fringes a pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	5%		10%	20%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.57**
	Total Sub-score:	9.00	0.70	0.00	0.70	0.80	0.15	**11.35**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel lot present within 100 feet of WL-LTZ-150-PEM.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	12	* (0.33)	4	**0.77**
		Total Score:	**15**	

Comments: 1 single laned paved road, 4 driveways/lots present within 300 feet of WL-LTZ-150-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing present.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, grading.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.777456°	-77.769172°	WL-LTZ-151-POW

General Comments: Wetland is a pond system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	55%	5%		10%	15%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.60**
	Total Sub-score:	9.90	0.70	0.00	0.70	0.60	0.15	**12.05**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway, 1 parking lot present within 100 feet of WL-LTZ-151-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	9	* (0.33)	3	**0.68**
		Total Score:	**14**	

Comments: 2 single laned paved roads, 2 gravel roads, 3 driveways/parking lots present within 300 feet of WL-LTZ-151-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing around fringe.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, grading, dike/weir/dam.

		0.55
Score:	**11**	

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

		0.95
Score:	**19**	

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors present.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778104°	-77.769301°	WL-LTZ-152

General Comments: Wetland is an isolated depressional wetland that drains to the POW portion.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	10%		15%	20%	15%	Total Score:
	Score:	18	14		7	4	1	
	Total Sub-score:	7.20	1.40	0.00	1.05	0.80	0.15	10.60

0.53

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

Comments: 1 driveway present within 100 feet of WL-LTZ-152.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6		5 4 3 2 1			

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	11	* (0.33)	4
		Total Score:	15

CI = Total Score/20: **0.75**

Comments: 1 two lane paved road, 1 single lane paved road, 1 gravel road, 2 driveways/farm lanes/parking lots present within 300 feet of WL-LTZ-149.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass, stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dewatering, dike/weir/dam, dredging.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.74**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778370°	-77.769440°	WL-LTZ-152-POW

General Comments: Wetland is a pond system.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	35%	10%	10%	15%	15%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.52**
	Total Sub-score:	6.30	1.40	0.90	1.05	0.60	0.15	**10.40**

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 driveway present within 100 feet of WL-LTZ-152-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	11	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: 1 two lane paved road, 1 single laned paved roads, 1 gravel roads, 2 driveways/parking lots present within 300 feet of WL-LTZ-152-POW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	16	**Total Score**
b. Vegetation Sub-Score:	19	**35**

0.88

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Dredging, grading, dike/weir/dam.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors present.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Algae.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	13	**Total Score:**
b. Contaminant Score	19	**32**

0.80

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.75**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/19/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.778667°	-77.769344°	WL-LTZ-153

General Comments: Wetland is an isolated depressional wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	40%	10%		15%	20%	15%	**Total Score:**	
	Score:	18	14		7	4	1		**0.53**
	Total Sub-score:	7.20	1.40	0.00	1.05	0.80	0.15	**10.60**	

Comments: 1 = roadways/buildings, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 two lane paved road, 1 gravel road present within 100 feet of WL-LTZ-153.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	9	* (0.33)	3	**0.62**
		Total Score:	**12**	

Comments: 1 two lane paved road, 1 single lane paved road, 1 gravel road, 3 driveways/parking lots present within 300 feet of WL-LTZ-153.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.82**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783154°	-77.722354°	WL-LTZ-154

General Comments: Wetland is a small floodplain bench of S-LTZ-079-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	65%	20%		5%	5%	5%	**Total Score:**	**0.76**
	Score:	18	14		7	4	1		
	Total Sub-score:	11.70	2.80	0.00	0.35	0.20	0.05	**15.10**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-154.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	17	* (0.33)	6	**0.92**
		Total Score:	**18**	

Comments: 1 driveway present within 300 feet of WL-LTZ-154.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	Optimal					Suboptimal									Poor					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
b. Vegetation Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	9	**Total Score**
b. Vegetation Sub-Score:	19	**28**

0.70

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	Optimal					Suboptimal					Marginal					Poor				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**

0.83

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.784472°	-77.725078°	WL-LTZ-155

General Comments: Wetland is a small floodplain bench of S-LTZ-065-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	25%		5%	10%	10%	**Total Score:**	**0.67**
	Score:	18	14		7	4	1		
	Total Sub-score:	9.00	3.50	0.00	0.35	0.40	0.10	**13.35**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 two lane paved road present within 100 feet of WL-LTZ-155.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: 1 two lane paved road, 1 gravel road, 1 driveway present within 300 feet of WL-LTZ-155.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stiltgrass.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	10	**Total Score**	**0.73**
b. Vegetation Sub-Score:	19	**29**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Stream alteration.

Score:	**17**	**0.85**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Sediment deposits, eroding banks.

Score:	**14**	**0.70**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.784522°	-77.724891°	WL-LTZ-156

General Comments: Wetland is a small floodplain bench of S-LTZ-065-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	50%	25%		5%	10%	10%	**Total Score:**	
	Score:	18	14		7	4	1		**0.67**
	Total Sub-score:	9.00	3.50	0.00	0.35	0.40	0.10	**13.35**	

Comments: 1 = buildings/roads, 4 = mowed areas

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 two lane paved road present within 100 feet of WL-LTZ-155.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: 1 two lane paved road, 1 driveway present within 300 feet of WL-LTZ-155.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**									**Poor**					
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.	> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.	Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	8	**Total Score**
b. Vegetation Sub-Score:	19	**27**

0.68

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.	Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Stream alteration.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.	Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/26/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.784617°	-77.733001°	WL-LTZ-157

General Comments: WL-LTZ-157 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	10%	10%	10%	64%	1%	**Total Score:**
	Score:	18	14	9	7	2	1	**0.26**
	Total Sub-score:	0.90	1.40	0.90	0.70	1.28	0.01	**5.19**

Comments: 1 = roads; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One farm lane and one gravel road present within 100 feet of WL-LTZ-157.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: One farm lane and one gravel road present within 300 feet of WL-LTZ-157.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Ag along fringe.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.69**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/26/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783388°	-77.731556°	WL-LTZ-158

General Comments: Wetland is a small floodplain bench of S-LTZ-080-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	40%	20%			35%	5%	**Total Score:**
	Score:	18	14			4	1	**0.57**
	Total Sub-score:	7.20	2.80	0.00	0.00	1.40	0.05	**11.45**

Comments: 1 = buildings/roads, 4 = mowed areas/nursery

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-158.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	*** (0.67)**	13	
b. Roadbed 100-300:	14	*** (0.33)**	5	**0.87**
		Total Score:	**17**	

Comments: 1 two lane paved road present within 300 feet of WL-LTZ-158.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																				**CI = Total Score/40**
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/20**
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Stream alteration.

		Score:	**17**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/20**
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Sediment deposits, eroding banks.

		Score:	**14**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					**Suboptimal**					**Marginal**					**Poor**				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/40**
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	07/25/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.784864°	-77.736345°	WL-LTZ-159

General Comments: WL-LTZ-159 is a large floodplain system along Spring Creek.

1. Wetland Zone of Influence Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	5%	15%	10%	60%	5%	**Total Score:**
	Score:	18	14	9	7	2	1	**0.25**
	Total Sub-score:	0.90	0.70	1.35	0.70	1.20	0.05	**4.90**

Comments: 1 = roads; 2 = row crops.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: One gravel road present within 100 feet of WL-LTZ-159.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments: One gravel road present within 300 feet of WL-LTZ-159.

Wetland Condition Assessment Form

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Ag along fringe.

a. Invasive Sub-Score:	7	**Total Score**
b. Vegetation Sub-Score:	17	**24**

0.60

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations, culverts.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.70**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.779774°	-77.732290°	WL-LTZ-160

General Comments: WL-LTZ-160 is a small floodplain bench located in a suburban neighborhood along S-LTZ-026-EPH.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	15%			45%	20%	**Total Score:**	
	Score:	18	14			4	1		**0.39**
	Total Sub-score:	3.60	2.10	0.00	0.00	1.80	0.20	**7.70**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One driveway present within 100 feet of WL-LTZ-160.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	2	* (0.33)	1	**0.60**
		Total Score:	**12**	

Comments: One 2-lane road and fifteen driveways present within 300 feet of WL-LTZ-160.

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No Invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing along fringe.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.76**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.780148°	-77.732488°	WL-LTZ-161

General Comments: WL-LTZ-161 is a small floodplain bench located in a suburban neighborhood along S-LTZ-026-EPH.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	15%			45%	20%	**Total Score:**	**0.39**
	Score:	18	14			4	1		
	Total Sub-score:	3.60	2.10	0.00	0.00	1.80	0.20	**7.70**	

Comments: 1 = roads and buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two driveways present within 100 feet of WL-LTZ-161.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	15	* (0.67)	10	
b. Roadbed 100-300:	2	* (0.33)	1	**0.54**
		Total Score:	**11**	

Comments: One 2-lane road and fourteen driveways present within 300 feet of WL-LTZ-161.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No Invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing along fringe.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	17	**36**

0.90

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographic alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding banks/slope.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.75**

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/01/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie	40.786159°	-77.685279°	WL-LTZ-162

General Comments: WL-LTZ-162 is a floodplain system along S-LTZ-031-PER and Taylor Hill Rd.

1. Wetland Zone of Influence Condition Index

	Condition Category										
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**	**Suboptimal**		**Marginal**		**Poor**		CI = Total Score/20
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	15%	5%	5%	40%	10%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.46**
	Total Sub-score:	4.50	2.10	0.45	0.35	1.60	0.10	**9.10**

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories										
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**			
	High Optimal: No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

Comments: Two 1-lane roads and two driveways present within 100 feet of WL-LTZ-162.

	Condition Categories										
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**		**Suboptimal**		**Marginal**		**Poor**			
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal**: Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	13	* (0.67)	9	
b. Roadbed 100-300:	11	* (0.33)	4	**0.62**
		Total Score:	**12**	

Comments: Two 1-lane roads and four driveways present within 300 feet of WL-LTZ-162.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Reed canarygrass.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

CI = Total Score/20

Comments: Stormwater inputs, stream alterations, culverts.

Score:	**12**

0.60

5. Sediment Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No eutrophication stressors observed.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.70**

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	03/21/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.787683°	-77.679574°	WL-LTZ-163

General Comments: The source of hydrology for WL-LTZ-163 is a hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:		40%	20%	20%	10%	10%	**Total Score:**	**0.43**
	Score:		14	9	4	2	1		
	Total Sub-score:	0.00	5.60	1.80	0.80	0.20	0.10	**8.50**	

Comments: 1 = roads and buidlings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One gravel road, one 1-lane road, one dirt road present within 100 feet of WL-LTZ-163.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: One gravel road, one 1-lane road, one dirt road present within 100 feet of WL-LTZ-163.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Mowing.

a. Invasive Sub-Score:	10	**Total Score**	**0.68**
b. Vegetation Sub-Score:	17	**27**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Grading, microtopographic alterations, excavation, stormwater inputs.

Score:	**9**	**0.45**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slope.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Garbage.

a. Eutrophication Score	19	**Total Score:**	**0.85**
b. Contaminant Score	15	**34**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.66**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.785284°	-77.702045°	WL-LTZ-164

General Comments: Wetland is a hillside seep.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	20%	10%	5%	15%	40%	5%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.41**
	Total Sub-score:	3.60	1.40	0.45	1.05	1.60	0.05	**8.15**

Comments: 1 = row crops, buildings, 4 = mowed/plowed areas, pasture

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: 1 single lane paved road, 1 driveway present within 100 feet of WL-LTZ-164.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.77**
		Total Score:	**15**	

Comments: 1 single lane paved road, 2 driveways present within 300 feet of WL-LTZ-164.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Reed canarygrass, stiltgrass, multiflora rose, autumn olive.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	7	**Total Score**	**0.65**
b. Vegetation Sub-Score:	19	**26**	

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No hydrologic stressors observed.

Score:	19	**0.95**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No sediment stressors observed.

Score:	19	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No eutrophication stressors observed..

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.786441°	-77.701757°	WL-LTZ-165

General Comments: Wetland is a hillside seep wetland

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%	5%	15%	30%	20%	25%	**Total Score:**
	Score:	18	14	9	7	4	1	
	Total Sub-score:	0.90	0.70	1.35	2.10	0.80	0.25	**6.10**

0.31

Comments: 1 = row crops, 4 = mowed/plowed areas, pasture

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-165.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	19	* (0.67)	13
b. Roadbed 100-300:	19	* (0.33)	6
		Total Score:	**19**

0.95

Comments: No roadways present within 300 feet of WL-LTZ-165.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing.

a. Invasive Sub-Score:	12	**Total Score**
b. Vegetation Sub-Score:	17	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographical alterations.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Pasture with manure.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	14	**Total Score:**
b. Contaminant Score	19	**33**

0.83

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/11/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.788002°	-77.699289°	WL-LTZ-166

General Comments: Wetland is a small floodplain bench of S-LTZ-028-PER.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	5%		5%	15%	60%	15%	**Total Score:**
	Score:	18		9	7	4	1	**0.25**
	Total Sub-score:	0.90	0.00	0.45	1.05	2.40	0.15	**4.95**

Comments: 1 = row crops, buildings, 4 = mowed/plowed areas, pasture

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 farm lane present within 100 feet of WL-LTZ-166.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.78**
		Total Score:	**16**	

Comments: 1 farm lane, 3 gravel driveways present within 300 feet of WL-LTZ-166.

Wetland Condition Assessment Form

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Livestock grazing, mowing.

a. Invasive Sub-Score:	11	**Total Score**	**0.63**
b. Vegetation Sub-Score:	14	**25**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Microtopographical alterations.

Score:	**17**	**0.85**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits.

Score:	**17**	**0.85**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed..

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.72**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/13/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.797448°	-77.642839°	WL-LTZ-169

General Comments: WL-LTZ-169 is hillside seep wetland located along Mountain Back Road.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	45%	15%	10%	20%		10%	**Total Score:**
	Score:	18	14	9	4		1	**0.60**
	Total Sub-score:	8.10	2.10	0.90	0.80	0.00	0.10	**12.00**

Comments: 1 = roads; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two two-lane roads and one driveway present within 100 feet of WL-LTZ-169.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	12	* (0.67)	8	
b. Roadbed 100-300:	11	* (0.33)	4	**0.58**
		Total Score:	**12**	

Comments: One two-lane roads and two driveways present within 300 feet of WL-LTZ-169.

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed in wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Excavation, ditching, stormwater inputs, roadways.

Score:	**9**

0.45

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Eroding slopes.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: Garbage/dumping.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	15	**34**

0.85

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.71**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.782686°	-77.697107°	WL-LTZ-170

General Comments: Wetland is a small floodplain bench wetland

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	Optimal					Suboptimal					Marginal					Poor				
	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	30%	10%	5%	20%	20%	15%	**Total Score:**
	Score:	18	14	9	7	4	1	**0.48**
	Total Sub-score:	5.40	1.40	0.45	1.40	0.80	0.15	**9.60**

Comments: 1 = buildings/roads, 4 = mowed/plowed areas

2. Roadbed Presence Index

	Condition Categories																			
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: 1 gravel road, 1 driveway present within 100 feet of WL-LTZ-170.

	Condition Categories																			CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	Optimal					Suboptimal					Marginal					Poor				
	High Optimal: No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	16	* (0.67)	11	
b. Roadbed 100-300:	13	* (0.33)	4	**0.75**
		Total Score:	**15**	

Comments: 1 gravel road, 3 driveways present within 300 feet of WL-LTZ-170.

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors present.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrological stressors present.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.84**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.782663°	-77.703022°	WL-LTZ-171

General Comments: Wetland is a small hillside/headwater seep that S-LTZ-091-INT flows from.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	30%	10%		60%			**Total Score:**	**0.55**
	Score:	18	14		7				
	Total Sub-score:	5.40	1.40	0.00	4.20	0.00	0.00	**11.00**	

Comments: 1 = roadways

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-172.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: 3 farm lanes present within 300 feet of WL-LTZ-172.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species present.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.87**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/07/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
C. Leslie et al.	40.783175°	-77.703300°	WL-LTZ-172

General Comments: Wetland is a small floodplain bench of S-LTZ-091-INT.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	20%	10%		70%			**Total Score:**	**0.50**
	Score:	18	14		7				
	Total Sub-score:	3.60	1.40	0.00	4.90	0.00	0.00	**9.90**	

Comments: 1 = roadways

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadways present within 100 feet of WL-LTZ-172.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: 3 farm lanes present within 300 feet of WL-LTZ-172.

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Reed canarygrass.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	4	**Total Score**
b. Vegetation Sub-Score:	19	**23**

0.58

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No hydrologic stressors observed.

Score:	**19**

0.95

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Sediment deposits, eroding banks.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.76**

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/14/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796928°	-77.644393°	WL-LTZ-173

General Comments: WL-LTZ-173 is a depressional system connected to WL-LTZ-173.

1. Wetland Zone of Influence Condition Index

	Condition Category																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	5%		65%		5%	**Total Score:**	
	Score:	18	14		4		1		**0.39**
	Total Sub-score:	4.50	0.70	0.00	2.60	0.00	0.05	**7.85**	

Comments: 1 = roads, buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No roads present within 100 feet of WL-LTZ-173.

	Condition Categories																				CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* (0.67)	13	
b. Roadbed 100-300:	14	* (0.33)	5	**0.87**
		Total Score:	**17**	

Comments: One driveway and one two-lane road present within 300 feet of WL-LTZ-173.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed within the wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: The wetland is mowed.

a. Invasive Sub-Score:	19	**Total Score**	**0.90**
b. Vegetation Sub-Score:	17	**36**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond, microtopographic alterations.

Score:	**14**	**0.70**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**	**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Wetland Condition Assessment Form

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
JN197202	State College Area Connector	08/14/23				

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
B. Hepler	40.796718°	-77.644657°	WL-LTZ-173-POW

General Comments: WL-LTZ-173-POW is a man-made pond.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	25%	5%		65%		5%	**Total Score:**	
	Score:	18	14		4		1		**0.39**
	Total Sub-score:	4.50	0.70	0.00	2.60	0.00	0.05	**7.85**	

Comments: 1 = roads, buildings; 4 = mowed areas.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but equal to or less than 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roads present within 100 feet of WL-LTZ-173-POW.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	19	* **(0.67)**	13	
b. Roadbed 100-300:	17	* **(0.33)**	6	**0.92**
		Total Score:	**18**	

Comments: Two driveways present within 300 feet of WL-LTZ-173-POW.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No invasive species observed within the wetland.

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No vegetation stressors observed.

a. Invasive Sub-Score:	19	**Total Score**
b. Vegetation Sub-Score:	19	**38**

0.95

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Pond.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: No sediment stressors observed.

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No eutrophication stressors observed.

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No contaminant stressors observed.

a. Eutrophication Score	19	**Total Score:**
b. Contaminant Score	19	**38**

0.95

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.81**

FUNCTIONAL ASSESSMENT SUMMARY TABLE

FUNCTIONAL CLASSIFICATION	PRINCIPAL FUNCTIONS AND VALUES
Large Floodplain Wetlands	Groundwater Recharge/Discharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Production Export, Sediment/Shoreline Stabilization, Wildlife Habitat
Small Floodplain Bench Wetlands	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Sediment/Shoreline Stabilization,
Hillside/Headwater Seep Wetlands	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat
Mesic/Farmland Wetlands	Sediment/Toxicant Retention, Nutrient Removal
Depressional Wetlands	Sediment/Toxicant Retention, Nutrient Removal
Ponds	Floodflow Alteration, Fish and Shellfish Habitat, Sediment/Toxicant Retention, Wildlife Habitat, Recreation

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 30-700'

Dominant wetland systems present PEM, PSS, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? ~1-4 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Large Floodplain Wetlands

Latitude 40.798731° Longitude -77.645994°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,4,6,7,13,15	X	*Perennial stream flows through these wetlands. Wetlands contains perennial seeps/springs.
Floodflow Alteration	Y	1,3,5,6,7,8,9,10,11,13,14,16,17,18	X	Wetlands receive and retain floodwater and overland runoff.
Fish and Shellfish Habitat	Y	3,4,7,8,11,12,14,16,17		Wetlands provide supporting habitat to for fish but do not provide primary habitat.
Sediment/Toxicant Retention	Y	1,3,4,6,7,10,11,14,15,16	X	Dense vegetation and slow-moving water allow for this function.
Nutrient Removal	Y	1,4,5,7,8,9,11,12,13	X	Dense vegetation and slow-moving water allow for this function.
Production Export	Y	1,2,4,7,8,10,12	X	Wetlands exhibit vegetative diversity, detritus development, and flushing of organic matter.
Sediment/Shoreline Stabilization	Y	1,3,6,7,8,9,12,13,14,15	X	Wetlands border persistent watercourses.
Wildlife Habitat	Y	6,7,8,9,10,13,14,17	X	Various species of birds and insects, as well as animal tracks, were observed in the wetlands.
Recreation	N	6,7		
Educational/Scientific Value	N	11,14		Access to these wetlands is restricted.
Uniqueness/Heritage	N	7,11,17,22,27		
Visual Quality/Aesthetics	N	3		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes large (>0.5 acre) wetlands located in floodplains within the study area. The coordinates above refer to a representative wetland from this group (WL-LTZ-016).

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 30-700'

Dominant wetland systems present PEM, PSS, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? ~1-2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Small Floodplain Bench Wetlands

Latitude 40.800184° Longitude -77.650070°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	1,2,4,6,7,15		
Floodflow Alteration	Y	2,3,5,6,7,10,11,13,14,16,18	X	Wetlands receive and retain floodwater and overland runoff.
Fish and Shellfish Habitat	Y	4,7,8,11,12,14,16,17		Wetlands provide supporting habitat to for fish but do not provide primary habitat.
Sediment/Toxicant Retention	Y	1,3,4,6,7,10,14,16	X	Dense vegetation and slow-moving water allow for this function.
Nutrient Removal	Y	3,4,5,7,8,9,11,12,13	X	Dense vegetation and slow-moving water allow for this function.
Production Export	N	1,4,7,12		
Sediment/Shoreline Stabilization	Y	1,2,3,6,8,9,12,13,14,15	X	Wetlands border persistent watercourses.
Wildlife Habitat	Y	6,7,8,13,17		Function limited by small size of wetlands.
Recreation	N	6,7		
Educational/Scientific Value	N	11,14		Access to these wetlands is restricted.
Uniqueness/Heritage	N	7,11,22		
Visual Quality/Aesthetics	N	N/A		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes small (<0.5 acre) floodplain bench wetlands located along streams within the study area. The coordinates above refer to a representative wetland from this group (WL-LTZ-015).

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 10-700'

Dominant wetland systems present PEM, PSS, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? ~1-2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Hillside/Headwater Seeps

Latitude 40.780289° Longitude -77.725197°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	2,6,7,13	X	
Floodflow Alteration	N	2,3,5,13,14,16,18		
Fish and Shellfish Habitat	N	1,14,17		
Sediment/Toxicant Retention	Y	1,3,4,7,10,14,16	X	Dense vegetation and slow-moving water allow for this function.
Nutrient Removal	Y	3,5,7,8,9,11,12,13,14	X	Dense vegetation and slow-moving water allow for this function.
Production Export	N	1,4,7,8,12		
Sediment/Shoreline Stabilization	N	1,2,3,6,9,13,14,15		
Wildlife Habitat	Y	6,7,8,9,10,13,14,17	X	
Recreation	N	6,7		
Educational/Scientific Value	N	11,14		Access to these wetlands is restricted.
Uniqueness/Heritage	N	11,22		
Visual Quality/Aesthetics	N	3		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes hillside/headwater seep wetlands within the study area. The coordinates above refer to a representative wetland from this group (WL-LTZ-100).

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 10-700'

Dominant wetland systems present PEM, PSS Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? ~1-2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Mesic/Farmland Wetlands

Latitude 40.795210° Longitude -77.643879°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	2,6		
Floodflow Alteration	N	3,5,9,14,18		
Fish and Shellfish Habitat	N	14		
Sediment/Toxicant Retention	Y	1,3,4,7,10,16	X	Dense vegetation and slow-moving water allow for this function.
Nutrient Removal	Y	3,5,7,8,9,11,12,13,14	X	Dense vegetation and slow-moving water allow for this function. Large quantities of manure/fertilizer present.
Production Export	N	1,7,12		
Sediment/Shoreline Stabilization	N	1,2,3		
Wildlife Habitat	N	6,7,8,13		
Recreation	N	N/A		
Educational/Scientific Value	N	14		Access to these wetlands is restricted.
Uniqueness/Heritage	N	N/A		
Visual Quality/Aesthetics	N	N/A		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes mesic/farmland wetlands within the study area. The coordinates above refer to a representative wetland from this group (WL-LTZ-005).

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 10-700'

Dominant wetland systems present PEM,PSS Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Depressional Wetlands

Latitude 40.793771° Longitude -77.651164°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	6		
Floodflow Alteration	N	3,5,9,18		
Fish and Shellfish Habitat	N	N/A		
Sediment/Toxicant Retention	Y	1,3,4,7	X	Dense vegetation and slow-moving water allow for this function.
Nutrient Removal	Y	3,4,7,8,9,11	X	Dense vegetation and slow-moving water allow for this function.
Production Export	N	1,7,12		
Sediment/Shoreline Stabilization	N	3		
Wildlife Habitat	N	8,13,17		Function limited by small size of wetlands.
Recreation	N	N/A		
Educational/Scientific Value	N	14		Access to these wetlands is restricted.
Uniqueness/Heritage	N	N/A		
Visual Quality/Aesthetics	N	N/A		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes depressional wetlands within the study area. The coordinates above refer to a representative wetland from this group (WL-LTZ-021).

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"?_____

Adjacent land use Agricultural, Wooded, Riparian, Roadways Distance to nearest roadway or other development 10-700'

Dominant wetland systems present POW Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? ~1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Ponds

Latitude 40.795626° Longitude -77.665534°

Prepared by: BPH Date 2023

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	2,7,9,15		
Floodflow Alteration	Y	3,5,7,9,13,15	X	Ponds receive and retain floodwater and overland runoff.
Fish and Shellfish Habitat	Y	3,9,10,14	X	Fish present in many of the ponds.
Sediment/Toxicant Retention	Y	1,3,4,5,10,12	X	Long-duration water retention and geomorphic position allow for this function.
Nutrient Removal	N	2,3,4,5,7,8		
Production Export	N	4		
Sediment/Shoreline Stabilization	N	3,6,10,11,12,13,14,15		
Wildlife Habitat	X	6,7,8,9,17,20	X	
Recreation	X	2,6,7,8	X	
Educational/Scientific Value	N	12,14		Access to these ponds is restricted.
Uniqueness/Heritage	N	6,11,17,19,21,23		
Visual Quality/Aesthetics	N	2		
ES Endangered Species Habitat	N	N/A		The project is in the range of T&E species, including Myotis sodalis and Alasmidonta undulata;
Other				however, these species are not dependent on the habitat features characteristic of these wetlands.

Notes: This form describes ponds within the study area. The coordinates above refer to a representative pond from this group (WL-LTZ-037-POW).

* Refer to backup list of numbered considerations.

APPENDIX D –
RIVERINE RAPID ASSESSMENT

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

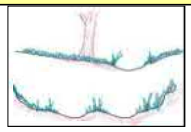
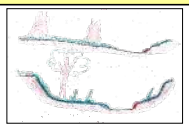
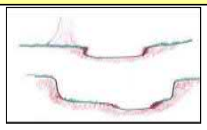
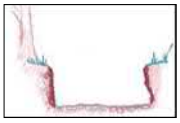
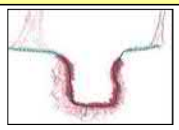
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated:	Existing:		
Latitude	40.800120°	Longitude	-77.646966°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-AHE-001-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.56	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	14	7	0	0	0	0		
	Total Sub-score:	**8.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.56	CI = (Left Side CI + Right Side CI)/2 = CI: 0.56
	Score:	14	7	0	0	0	0		
	Total Sub-score:	**8.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	20%	80%	0%	0%	0%	0%	**0.42**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	14	7	0	0	0	0		
	Total Sub-score:	**2.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	70%	0%	0%	0%	0%	**0.52**	**CI = (Left Side CI + Right Side CI)/2** **CI** **0.47**
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**5.40**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

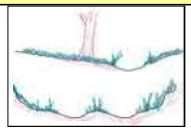
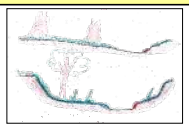
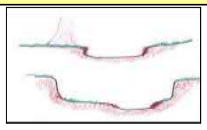
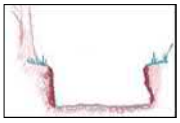
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.793042°	Longitude	-77.646433°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-BPH-001-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.			

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 2 = row crops
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	20%	20%	10%	20%	0%	**0.48**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	14	9	7	18	2	0		
	Total Sub-score:	**4.20**	**1.80**	**1.40**	**1.80**	**0.40**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	20%	30%	20%	10%	0%	**0.45**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	14	9	7	2	18	0		**0.46**
	Total Sub-score:	**2.80**	**1.80**	**2.10**	**0.40**	**1.80**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18**	**0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	**Low**	**High**	**Low**			
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18**	**0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.71**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

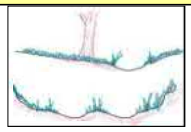
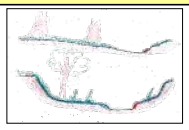
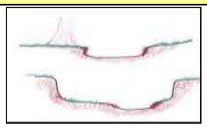
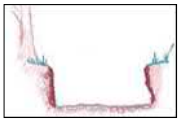
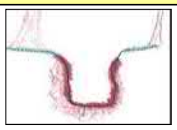
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/23/2024	Designated: CWF. MF	Existing:		
Latitude	40.792250°	Longitude	-77.658417°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
B. Hepler	S-BPH-002-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** 4 = mowed areas.
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	15%	40%	0%	45%	0%	20%	0.52	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	4	0	1		
	Total Sub-score:	**2.70**	**5.60**	**0.00**	**1.80**	**0.00**	**0.20**		
	Condition Category								
Left Side	% Riparian Area:	5%	35%	0%	60%	0%	20%	0.17	CI = (Left Side CI + Right Side CI)/2 = 0.34
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**0.90**	**0.00**	**0.00**	**2.40**	**0.00**	**0.20**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 4 = mowed areas.
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	10%	30%	0%	60%	0%	0%	**0.42**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	4	0	0		
	Total Sub-score:	**1.80**	**4.20**	**0.00**	**2.40**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	0%	0%	0%	100%	0%	0%	**0.20**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	0	0	0	4	0	0		**0.31**
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**4.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 14** → **0.70**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.61**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

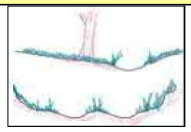
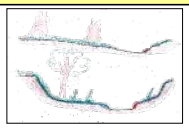
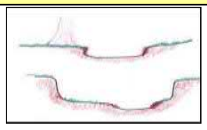
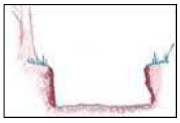
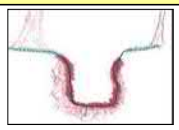
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/23/2024	Designated: HQ-CWF. MF	Existing:		
Latitude	40.798556°	Longitude	-77.728528°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
B. Hepler	Cedar Run (S-BPH-003-PER)	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					Comments: 1 = roads; 4 = mowed areas.
	Optimal					Suboptimal					Marginal				Poor							
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
						High					Low				High					Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	0%	15%	10%	65%	0%	10%	0.24	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	0	9	7	4	0	1		
	Total Sub-score:	**0.00**	**1.35**	**0.70**	**2.60**	**0.00**	**0.10**		
Left Side	Condition Category								
	% Riparian Area:	0%	15%	5%	70%	0%	10%	0.23	CI = (Left Side CI + Right Side CI)/2 = 0.23
	Score:	0	9	7	4	0	1		
	Total Sub-score:	**0.00**	**1.35**	**0.35**	**2.80**	**0.00**	**0.10**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads; 4 = mowed areas.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	0%	15%	10%	65%	0%	10%	**0.24**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	0	9	7	4	0	1		
	Total Sub-score:	**0.00**	**1.35**	**0.70**	**2.60**	**0.00**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	0%	15%	0%	75%	0%	10%	**0.22**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	0	9	0	4	0	1		**0.23**
	Total Sub-score:	**0.00**	**1.35**	**0.00**	**3.00**	**0.00**	**0.10**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 13 → **0.65**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culvert
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE** 15 → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.51**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

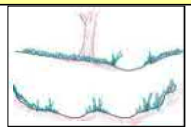
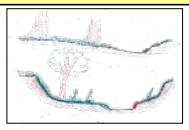
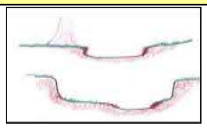
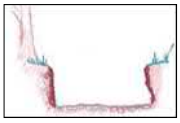
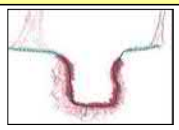
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.796088°	Longitude	-77.676113°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-BPH-004-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

| | Condition Category | | | | | | | | | | | | | | | | | | |

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	10%	40%	30%		0%	20%	0.28	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	14	7	4		0	1		
	Total Sub-score:	1.40	2.80	1.20	0.00	0.00	0.20		
	Condition Category								
Left Side	% Riparian Area:	20%	20%	40%	0%	0%	20%	0.30	CI = (Left Side CI + Right Side CI)/2 = 0.29
	Score:	14	7	4	0	0	1		
	Total Sub-score:	2.80	1.40	1.60	0.00	0.00	0.20		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	CI = (Score)/20	CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 0	0.00

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culvert	
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		CI = (Score)/20	CI
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	SCORE 12	0.60

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	0.55

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

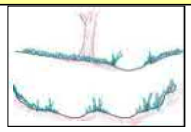
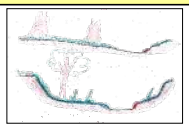
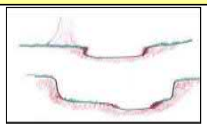
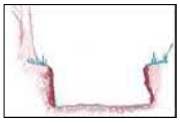
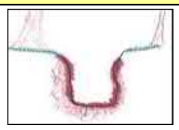
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/23/2024	Designated: CWF, MF	Existing:		
Latitude	40.789722°	Longitude	-77.669083°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: UNT to Sinking Creek. Perennial watercourse.
B. Hepler	S-BPH-005-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	0%	0%	70%	0%	0%	0.59	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	9	0	0		
	Total Sub-score:	**5.40**	**0.00**	**0.00**	**6.30**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	50%	0%	0%	50%	0%	0%	0.45	CI = (Left Side CI + Right Side CI)/2
	Score:	18	0	0	0	0	0		CI: 0.52
	Total Sub-score:	**9.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	0%	0%	20%	0%	0%	**0.81**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	0	0	9	0	0		
	Total Sub-score:	**14.40**	**0.00**	**0.00**	**1.80**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	80%	0%	0%	20%	0%	0%	**0.81**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.81**
	Score:	18	0	0	9	0	0		
	Total Sub-score:	**14.40**	**0.00**	**0.00**	**1.80**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 14** → **CI 0.70**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Influence from ag. activity.
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 13** → **CI 0.65**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.66**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

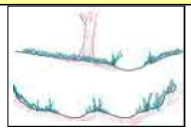
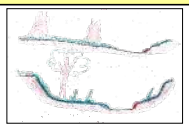
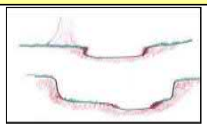
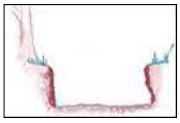
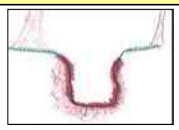
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.792189°	Longitude	-77.657714°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-BPH-022-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																	Comments: Facing downstream
	Optimal					Suboptimal				Marginal				Poor				
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High				Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		CI: 0.85
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	10%	20%	30%	40%	0%	0%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	2	0	0		
	Total Sub-score:	**1.80**	**2.80**	**2.10**	**0.80**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	20%	40%	10%	0%	0%	**0.56**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	2	0	0		**0.47**
	Total Sub-score:	**5.40**	**2.80**	**2.80**	**0.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 11** → **0.55**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.71**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

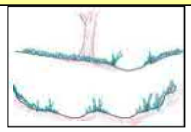
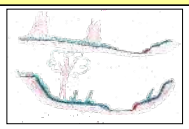
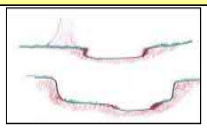
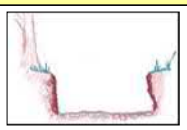
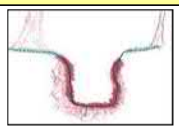
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/12/23	Designated: CWF, MF	Existing:		
Latitude	40.7793	Longitude	-77.7279	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-CML-001-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.84

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / **Low**	**High** / **Low**	**High** / **Low**	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.84

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.		**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1		**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				**Comments:** Concrete wall at source.	
	Negligible	**Minor**	**Moderate**	**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		
		High / **Low**	**High** / **Low**			**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1		**SCORE 15**	**0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.83**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

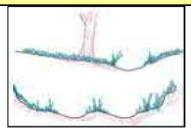
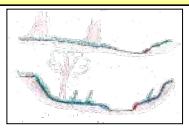
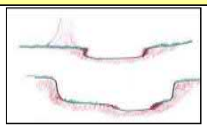
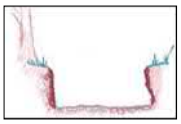
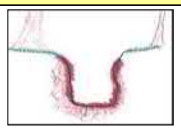
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/12/23	Designated: CWF, MF	Existing:		
Latitude	40.7811	Longitude	-77.7130	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
C. Leslie	S-CML-002-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	65%	35%	0%	0%	0%	0%	0.83	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**11.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	65%	35%	0%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.83
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**11.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / **Low**	**High** / **Low**	**High** / **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	65%	35%	0%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**11.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	65%	35%	0%	0%	0%	0%	**0.83**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**11.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		**0.83**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** — **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High / **Low**	**High** / **Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.86**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

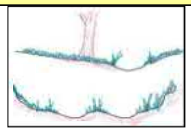
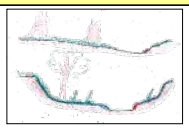
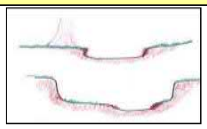
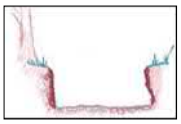
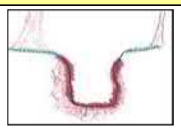
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/12/23	Designated: CWF, MF	Existing:		
Latitude	40.781594°	Longitude	-77.713809°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
C. Leslie	S-CML-003-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	85%	15%	0%	0%	0%	0%	0.87	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**15.30**	**2.10**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	CI = (Left Side CI + Right Side CI)/2 = 0.87
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / **Low**	**High** / **Low**	**High** / **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	**0.86**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	**0.86**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		**0.86**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** — **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High / **Low**	**High** / **Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.89**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

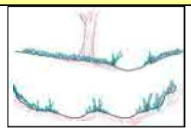
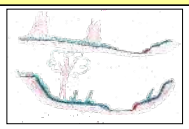
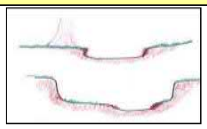
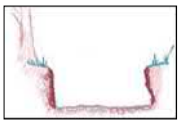
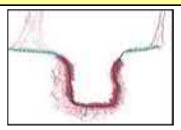
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/13/23	Designated: CWF, MF	Existing:		
Latitude	40.783014°	Longitude	-77.712745°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
C. Leslie	S-CML-005-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.84

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments: 4 = mowed areas
	Optimal	Suboptimal	Marginal	Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	75%	20%	0%	0%	5%	0%	0.83	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	4	0		CI: 0.84
	Total Sub-score:	**13.50**	**2.80**	**0.00**	**0.00**	**0.20**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	CI = (Score)/20 CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 17 CI 0.85

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments: Culvert
	Negligible	Minor	Moderate	Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High / Low	High / Low		CI = (Score)/20 CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 14 CI 0.70

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	0.79

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

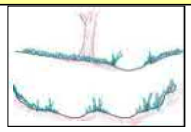
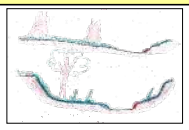
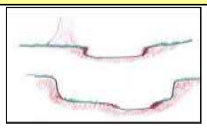
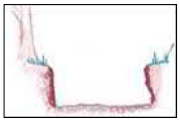
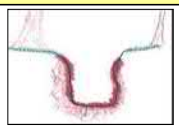
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/13/2024	Designated: CWF, MF	Existing:		
Latitude	40.7837°	Longitude	-77.7136°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-CML-006-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		

CI
0.79

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	**0.82**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**10.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	20%	50%	0%	0%	0%	**0.59**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.70**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**2.80**	**3.50**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	Minor	Moderate	Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High / Low	High / Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 18** → **CI 0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.82**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

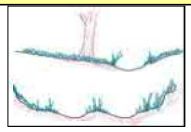
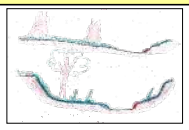
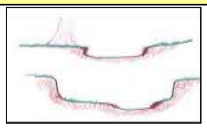
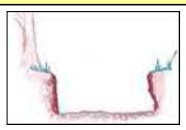
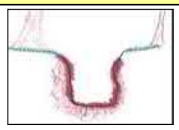
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	04/13/2024	Designated: CWF, MF	Existing:		
Latitude	40.7835°	Longitude	-77.7140°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-CML-007-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	8	0.40

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	CI = (Left Side CI + Right Side CI)/2 = 0.79
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	55%	30%	15%	0%	0%	0%	**0.76**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.80**
	Total Sub-score:	**9.90**	**4.20**	**1.05**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Confined to tire ruts	
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 7**	**0.35**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.58**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

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Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

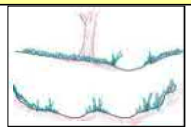
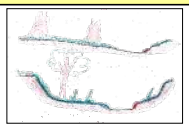
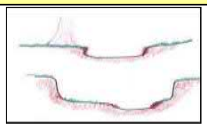
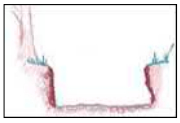
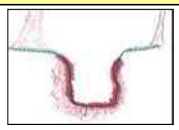
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	04/13/2024	Designated: CWF, MF	Existing:		
Latitude	40.7842°	Longitude	-77.7139°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-CML-008-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	8	0.40

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** 4 = mowed areas
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	5%	0%	0%	95%	0%	0%	0.24	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	4	0	0		
	Total Sub-score:	**0.90**	**0.00**	**0.00**	**3.80**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	5%	0%	0%	95%	0%	0%	0.24	CI = (Left Side CI + Right Side CI)/2 = CI: 0.24
	Score:	18	0	0	4	0	0		
	Total Sub-score:	**0.90**	**0.00**	**0.00**	**3.80**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category										Comments: 1 = roads/buildings, 4 = mowed areas
	Optimal	Suboptimal		Marginal		Poor					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	5%	30%	10%	50%	0%	5%	**0.39**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	4	0	1		
	Total Sub-score:	**0.90**	**4.20**	**0.70**	**2.00**	**0.00**	**0.05**		
	Condition Category								
Left Side	% Riparian Area:				80%	0%	20%	**0.17**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.28**
	Score:				4	0	1		
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**3.20**	**0.00**	**0.20**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments: Decorative bridge, dredged pond section
	Negligible	Minor		Moderate		Severe			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.			**CI = (Score)/20** → **CI**
		High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1			**SCORE 14** → **CI 0.70**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.40**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

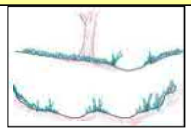
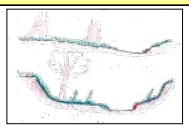
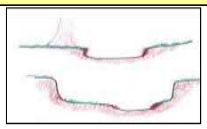
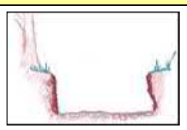
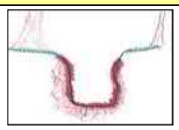
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	05/18/23	Designated: CWF, MF	Existing:		
Latitude	40.7793°	Longitude	-77.7326°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Uppermost and lowermost portion of the channel are considered intermittent; the majority is perennial.
C. Leslie	S-CML-009-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** 1 = buildings/roadways
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	5%	0%	5%	5%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**12.60**	**2.80**	**0.45**	**0.00**	**0.20**	**0.05**		
Left Side	Condition Category								
	% Riparian Area:	60%	25%	5%	0%	5%	5%	0.75	CI = (Left Side CI + Right Side CI)/2 = 0.78
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**10.80**	**3.50**	**0.45**	**0.00**	**0.20**	**0.05**		

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												**Comments:** 1 = buildings/roadways, 4 = mowed areas
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
			High	**Low**	**High**	**Low**	**High**	**Low**					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**			

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	60%	20%	0%	0%	10%	10%	**0.71**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	4	1		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.00**	**0.40**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	65%	20%	5%	0%	5%	5%	**0.76**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	9	0	4	1		**CI**
	Total Sub-score:	**11.70**	**2.80**	**0.45**	**0.00**	**0.20**	**0.05**		**0.73**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category												**Comments:**
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.						**CI = (Score)/20**	**CI**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE**	**17**	**0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category												**Comments:** Culverts, man-made boulder placement
	Negligible		**Minor**		**Moderate**		**Severe**						
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.		**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.						
			High	**Low**	**High**	**Low**							**CI = (Score)/20**	**CI**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE**	**13**	**0.65**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

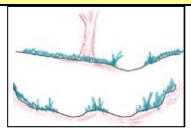
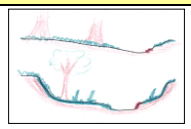
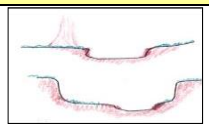
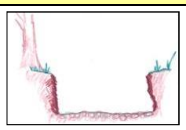
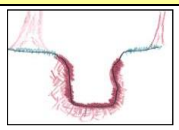
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	05/18/23	Designated: CWF, MF	Existing:		
Latitude	40.7766°	Longitude	-77.7317°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Uppermost and lowermost portion of the channel are considered intermittent.
C. Leslie	S-CML-009-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** 1 = buildings/roadways, **4 = mowed areas**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	5%	0%	5%	5%	**0.81**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**12.60**	**2.80**	**0.45**	**0.00**	**0.20**	**0.05**		
	Condition Category								
Left Side	% Riparian Area:	60%	25%	5%	0%	5%	5%	**0.75**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**10.80**	**3.50**	**0.45**	**0.00**	**0.20**	**0.05**		**CI 0.78**

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												**Comments:** 1 = buildings/roadways, 4 = mowed areas
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
			High	**Low**	**High**	**Low**	**High**	**Low**					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	60%	20%	0%	0%	10%	10%	**0.71**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	4	1		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.00**	**0.40**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	65%	20%	5%	0%	5%	5%	**0.76**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	9	0	4	1		**CI**
	Total Sub-score:	**11.70**	**2.80**	**0.45**	**0.00**	**0.20**	**0.05**		**0.73**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category												**Comments: No score due to Intermittent flow regime.**
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.		Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.						**CI = (Score)/20**	**CI**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE**	**0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category												**Comments:** Culverts, man-made boulder placement
	Negligible		**Minor**		**Moderate**		**Severe**						
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.		**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.						
			High	**Low**	**High**	**Low**							**CI = (Score)/20**	**CI**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE**	**13**	**0.65**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.72**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

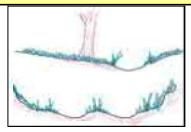
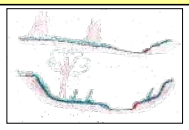
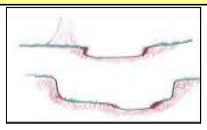
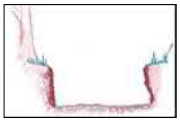
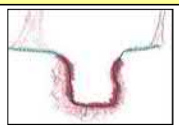
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	07/08/2024	Designated: CWF, MF	Existing:		
Latitude	40.7805°	Longitude	-77.7778°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-CML-010-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	10%	0%	0%	0%	0.82	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	0	0	0		
	Total Sub-score:	**12.60**	**2.80**	**0.90**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	65%	25%	10%	0%	0%	0%	0.81	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	0	0	0		CI: 0.81
	Total Sub-score:	**11.70**	**3.50**	**0.90**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category										**Comments:** 1 = roads/buildings
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	65%	25%	10%	0%	0%	0%	**0.80**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**11.70**	**3.50**	**0.70**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	25%	0%	24%	0%	1%	**0.71**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	0	7	0	1		**0.75**
	Total Sub-score:	**9.00**	**3.50**	**0.00**	**1.68**	**0.00**	**0.01**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				**Comments:** No score due to Intermittent flow regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								**Comments:** Fence
	Negligible	**Minor**		**Moderate**		**Severe**			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.			
		High	**Low**	**High**	**Low**				**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**			**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.80**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

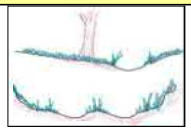
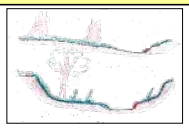
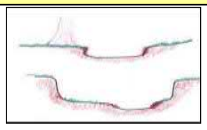
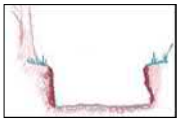
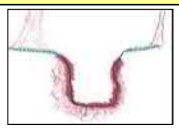
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	7/18/2023	Designated: CWF, MF	Existing:		
Latitude	40.779874°	Longitude	-77.778834°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: UNT to Spring Creek. Intermittent watercourse.
AHE	S-CML-011-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								**Comments:** Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	20%	30%	50%	0%	0%	0%	0.42	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	9	4	0	0	0		
	Total Sub-score:	**3.60**	**2.70**	**2.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	40%	20%	0%	0%	0%	0.61	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	9	7	0	0	0		**CI**
	Total Sub-score:	**7.20**	**3.60**	**1.40**	**0.00**	**0.00**	**0.00**		**0.51**

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2/7/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High Low	High Low	High Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	20%	50%	10%	0%	0%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	9	4	1	0	0		
	Total Sub-score:	**3.60**	**1.80**	**2.00**	**0.10**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	30%	40%	0%	0%	0%	**0.55**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.46**
	Score:	18	9	7	0	0	0		
	Total Sub-score:	**5.40**	**2.70**	**2.80**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score recorded for instream habitat due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	Minor	Moderate	Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High Low	High Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 17** → **CI 0.85**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.66**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

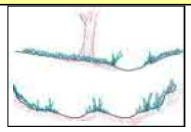
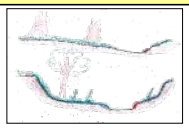
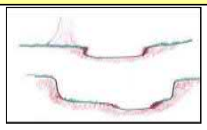
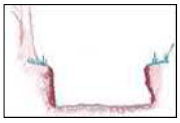
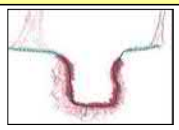
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778977°	Longitude	-77.718276°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-DJW-001-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					**Comments:** Facing downstream
	Optimal					Suboptimal					Marginal					Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.80
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High Low	High Low	High Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.77**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				**Comments:** No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	Minor	Moderate	Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High Low	High Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

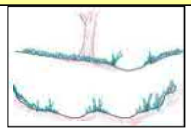
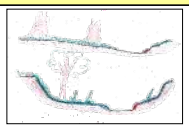
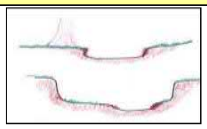
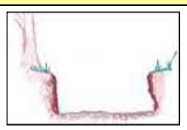
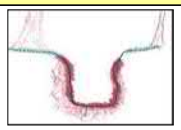
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	1/03/23	Designated: CWF, MF	Existing:		
Latitude	40.7994	Longitude	-77.6429	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Sinking Creek (S-LTZ-001-PER): Eastern segment. Perennial watercourse.
B. Hepler	Sinking Creek	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	10	0.50

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										Comments: 1 = roads
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	0%	0%	10%	9%	1%	0.78	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	9	4	1		
	Total Sub-score:	**14.40**	**0.00**	**0.00**	**0.90**	**0.36**	**0.01**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	0%	5%	14%	1%	0.75	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	9	4	1		CI: 0.77
	Total Sub-score:	**12.60**	**1.40**	**0.00**	**0.45**	**0.56**	**0.01**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												Comments: 1 = roads
	Optimal		Suboptimal		Marginal		Poor						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
			High	Low	High	Low	High	Low					
SCORE	20 19 18 17 16		15 14	13 12 11	10 9	8 7 6	5 4	3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	10%	0%	0%	9%	1%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	4	1		
	Total Sub-score:	**14.40**	**1.40**	**0.00**	**0.00**	**0.36**	**0.01**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	0%	0%	19%	1%	0.74	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	4	1		CI: 0.77
	Total Sub-score:	**12.60**	**1.40**	**0.00**	**0.00**	**0.76**	**0.01**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	CI = (Score)/20 | CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 16 | 0.80

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments: Bridge
	Negligible	Minor		Moderate		Severe			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		CI = (Score)/20 | CI
		High	Low	High	Low				
SCORE	20 19 18 17 16	15 14	13 12 11	10 9	8 7 6	5 4	3 2 1		SCORE 15 | 0.75

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.72**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

Pennsylvania Department of Environmental Protection

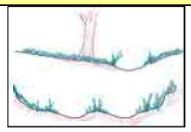
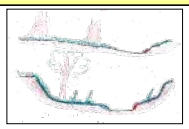
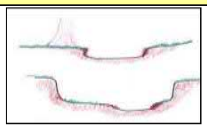
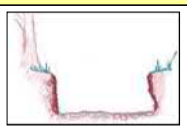
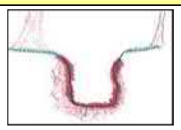
For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	7/6/23	Designated: CWF, MF	Existing:		

Latitude	40.7939	Longitude	-77.6667	FGM Level 1 Channel Classification

Evaluator(s)	Stream Name and Information	Notes: Sinking Creek (S-LTZ-001-PER): Western segment. Perennial watercourse.
B. Hepler	Sinking Creek	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	13	0.65

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** 1 = roads
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	20%	0%	10%	9%	1%	0.74	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	9	4	1		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.90**	**0.36**	**0.01**		
Left Side	Condition Category								
	% Riparian Area:	70%	20%	0%	9%	0%	1%	0.81	CI = (Left Side CI + Right Side CI)/2 = 0.78
	Score:	18	14	0	9	0	1		
	Total Sub-score:	**12.60**	**2.80**	**0.00**	**0.81**	**0.00**	**0.01**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												Comments: 1 = roads
	Optimal		Suboptimal		Marginal		Poor						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
			High	Low	High	Low	High	Low					
SCORE	20 19 18 17 16		15 14	13 12 11	10 9	8 7 6	5 4	3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	20%	0%	10%	9%	1%	0.74	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	9	4	1		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.90**	**0.36**	**0.01**		
	Condition Category								
Left Side	% Riparian Area:	70%	20%	0%	9%	0%	1%	0.81	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	9	0	1		CI: 0.78
	Total Sub-score:	**12.60**	**2.80**	**0.00**	**0.81**	**0.00**	**0.01**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	CI = (Score)/20 CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 18 0.90

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments: Bridges
	Negligible	Minor		Moderate		Severe			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		CI = (Score)/20 CI
		High	Low	High	Low				
SCORE	20 19 18 17 16	15 14	13 12 11	10 9	8 7 6	5 4	3 2 1		SCORE 14 0.70

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.76**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

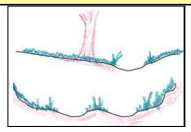
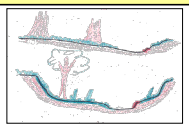
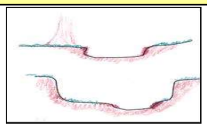
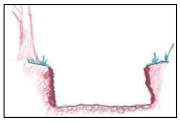
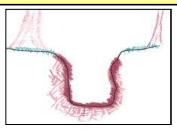
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated:	Existing:		
Latitude	40.793859°	Longitude	-77.643337°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial or intermittent watercourse
AHE	S-LTZ-002 Int/Per	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				**Comments:** 1 = roads/buildings; 4 = mowed areas.
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	0%	0%	0%	50%	0%	50%	0.25	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	0	0	0	9	0	1		
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**4.50**	**0.00**	**0.50**		
Left Side	Condition Category								
	% Riparian Area:	0%	0%	0%	60%	40%	0%	0.35	CI = (Left Side CI + Right Side CI)/2
	Score:	0	0	0	9	4	0		CI: 0.30
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**5.40**	**1.60**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					**Comments:** 1 = roads/buildings; 4 = mowed areas.
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	40%	0%	0%	0%	30%	**0.47**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	9	0	0	0	1		
	Total Sub-score:	**5.40**	**3.60**	**0.00**	**0.00**	**0.00**	**0.30**		
Left Side	Condition Category								
	% Riparian Area:	40%	0%	40%	0%	20%	0%	**0.58**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	0	9	0	4	0		**0.52**
	Total Sub-score:	**7.20**	**0.00**	**3.60**	**0.00**	**0.80**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				**Comments:**
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 11** → **0.55**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					**Comments:** Channel piped under yard, abuts 322.
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 9** → **0.45**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.50**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

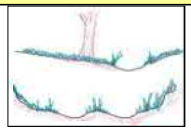
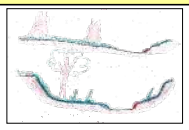
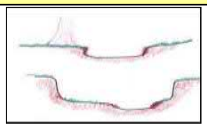
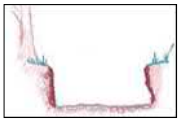
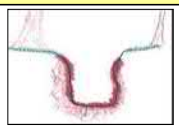
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.796195°	Longitude	-77.639892°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-003-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.74	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**12.60**	**2.10**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.74	CI = (Left Side CI + Right Side CI)/2 = 0.74
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**12.60**	**2.10**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 2 = row crops
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	20%	60%	0%	0%	0%	**0.37**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	4	0	0	0		
	Total Sub-score:	**3.60**	**1.40**	**2.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	10%	70%	0%	0%	0%	**0.29**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	7	2	0	0	0		**0.33**
	Total Sub-score:	**3.60**	**0.70**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.68**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

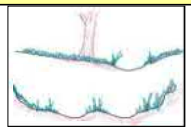
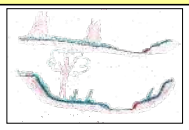
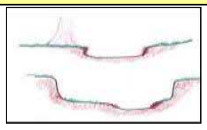
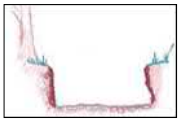
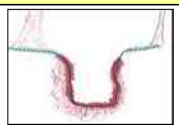
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated:	Existing:		
Latitude	40.793710°	Longitude	-77.637723°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-004-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				**Comments:** Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.71	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	9	7	0	0	0		
	Total Sub-score:	**10.80**	**2.70**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.59	CI = (Left Side CI + Right Side CI)/2
	Score:	18	1	7	0	0	0		CI: 0.65
	Total Sub-score:	**10.80**	**0.30**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category						Comments:
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	30%	40%	0%	0%	0%	**0.62**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**4.20**	**2.80**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.63**
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

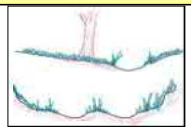
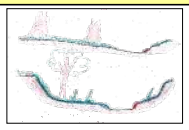
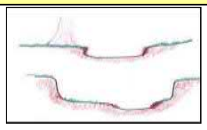
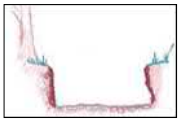
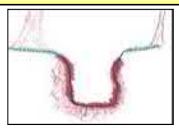
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated:	Existing:		
Latitude	40.7939095°	Longitude	-77.6398172°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-005-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																						**Comments:** Facing downstream
	Optimal					Suboptimal					Marginal					Poor							
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1			

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	50%	50%	0%	0%	0%	0%	0.63	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**9.00**	**3.50**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		CI: 0.71

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	**0.55**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**4.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.60**
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	**Low**	**High**	**Low**			
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18**	**0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

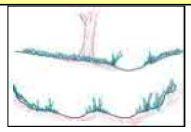
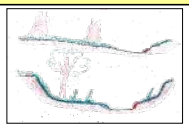
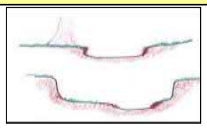
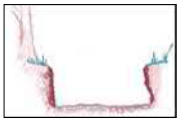
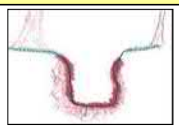
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.793993°	Longitude	-77.645478°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-006-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.				**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.				**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.				**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.				
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.68	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.69	CI = (Left Side CI + Right Side CI)/2
	Score:	18	7	9	0	0	0		
	Total Sub-score:	**10.80**	**2.10**	**0.90**	**0.00**	**0.00**	**0.00**		

CI
0.69

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	30%	20%	50%	0%	0%	0%	**0.39**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	2	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**1.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	30%	50%	0%	0%	0%	**0.57**	**CI = (Left Side CI + Right Side CI)/2** **CI** **0.48**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**4.20**	**3.50**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

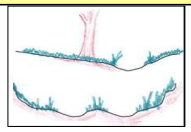
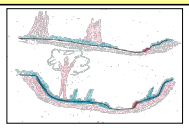
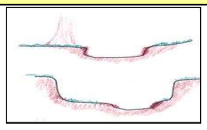
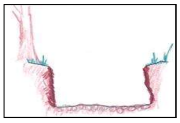
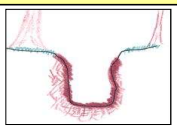
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated:	Existing:		
Latitude	40.793993°	Longitude	-77.645478°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-LTZ-007-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																	Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High			Low		High			Low	High		Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.68	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.69	CI = (Left Side CI + Right Side CI)/2
	Score:	18	7	9	0	0	0		
	Total Sub-score:	**10.80**	**2.10**	**0.90**	**0.00**	**0.00**	**0.00**		

CI
0.69

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	20%	50%	0%	0%	0%	**0.39**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	2	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**1.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	30%	50%	0%	0%	0%	**0.57**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.48**
	Total Sub-score:	**3.60**	**4.20**	**3.50**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** → **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

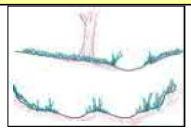
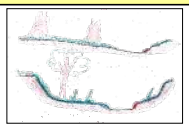
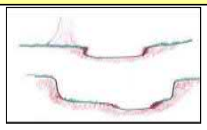
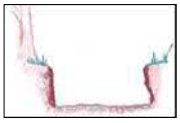
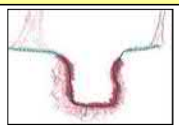
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.798851°	Longitude	-77.657698°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-008-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.82	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**10.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	10%	0%	0%	0%	0.88	CI = (Left Side CI + Right Side CI)/2 = 0.85
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.60**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	1	4	0	0		
	Total Sub-score:	**7.20**	**4.20**	**0.20**	**0.40**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.62**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	4	1	0	0		**0.61**
	Total Sub-score:	**7.20**	**4.20**	**0.80**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 17** → **0.85**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.78**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

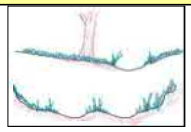
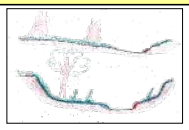
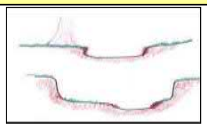
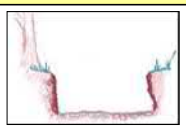
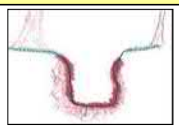
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.7996116°	Longitude	-77.6563473°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-009-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	40%	60%	0%	0%	0%	0%		
	Score:	14	7	0	0	0	0	**0.49**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Total Sub-score:	**5.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	80%	0%	0%	0%	0%		
	Score:	14	7	0	0	0	0	**0.42**	**CI = (Left Side CI + Right Side CI)/2**
	Total Sub-score:	**2.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		**CI: 0.46**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	30%	40%	10%	0%	0%	**0.54**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**3.60**	**4.20**	**2.80**	**0.10**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	10%	30%	50%	10%	0%	0%	**0.28**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	14	7	4	1	0	0		**0.41**
	Total Sub-score:	**1.40**	**2.10**	**2.00**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	Low	High	Low			
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 17**	**0.85**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.63**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

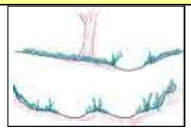
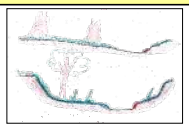
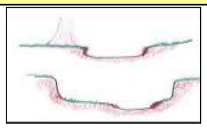
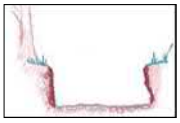
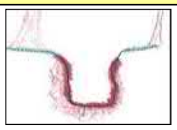
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.799683°	Longitude	-77.655687°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-010-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	10%	0%	0%	0%	0.89	CI = (Left Side CI + Right Side CI)/2 = 0.87
	Score:	18	14	9	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.90**	**0.00**	**0.00**	**0.00**		

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	30%	50%	20%	0%	0%	0%	**0.46**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	1	0	0	0		
	Total Sub-score:	**5.40**	**3.50**	**0.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	10%	30%	20%	0%	0%	**0.55**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	7	1	0	0		**0.50**
	Total Sub-score:	**7.20**	**1.40**	**2.10**	**0.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** — **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** — **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

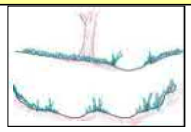
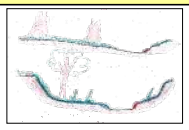
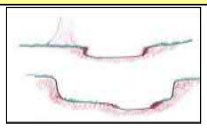
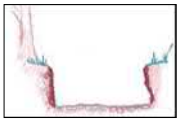
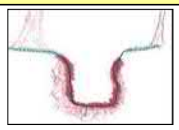
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.7965917°	Longitude	-77.6536509°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-015-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	10%	0%	0%	0%	0.89	CI = (Left Side CI + Right Side CI)/2 = 0.87
	Score:	18	14	9	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.90**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	40%	10%	40%	10%	0%	0%	**0.58**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**7.20**	**1.40**	**2.80**	**0.10**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	10%	30%	30%	0%	0%	**0.51**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	4	0	0		**0.54**
	Total Sub-score:	**5.40**	**1.40**	**2.10**	**1.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** → **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.76**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

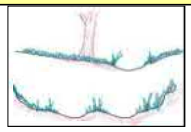
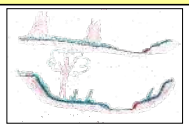
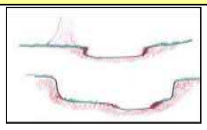
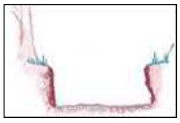
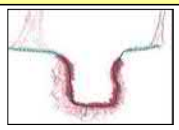
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF. MF	Existing:		
Latitude	40.7996732°	Longitude	-77.6626533°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-016-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.30	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**5.60**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.30	CI = (Left Side CI + Right Side CI)/2 = 0.30
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**5.60**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	80%	0%	0%	0%	0%	**0.15**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**1.40**	**1.60**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	80%	0%	0%	0%	0%	**0.15**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	7	2	0	0	0	0		**0.15**
	Total Sub-score:	**1.40**	**1.60**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.51**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

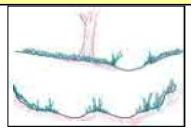
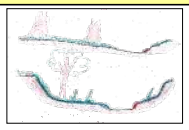
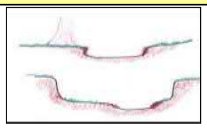
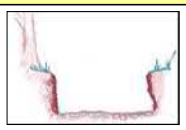
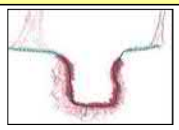
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.792340°	Longitude	-77.664662°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Tributary to Sinking Creek
AHE	Boal Gap Run (S-LTZ-017-PER)	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		**CI: 0.84**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	10%	20%	30%	40%	0%	0%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	2	0	0		
	Total Sub-score:	**1.80**	**2.80**	**2.10**	**0.80**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		**0.56**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

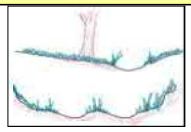
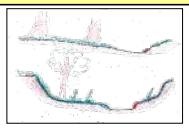
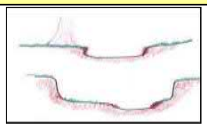
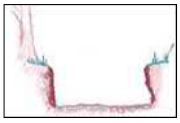
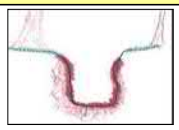
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/23/2024	Designated: CWF. MF	Existing:		
Latitude	40.792250°	Longitude	-77.660806°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes:
B. Hepler	S-LTZ-018-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1

Comments: Facing downstream. 1 = roads, 4 = grazed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	40%	0%	0%	40%	0%	20%	0.45	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**7.20**	**0.00**	**0.00**	**1.60**	**0.00**	**0.20**		
Left Side	Condition Category								
	% Riparian Area:	10%	0%	0%	70%	0%	20%	0.23	CI = (Left Side CI + Right Side CI)/2 = 0.34
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**1.80**	**0.00**	**0.00**	**2.80**	**0.00**	**0.20**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads, 4 = grazed areas.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	0%	0%	40%	0%	20%	**0.45**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**7.20**	**0.00**	**0.00**	**1.60**	**0.00**	**0.20**		
	Condition Category								
Left Side	% Riparian Area:	20%	0%	0%	60%	0%	20%	**0.31**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	0	0	4	0	1		**0.38**
	Total Sub-score:	**3.60**	**0.00**	**0.00**	**2.40**	**0.00**	**0.20**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 12 → **0.60**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Road/culvert
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE** 12 → **0.60**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.53**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

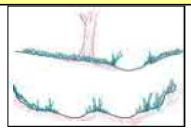
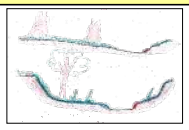
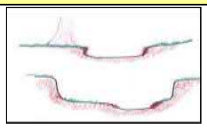
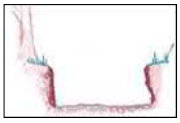
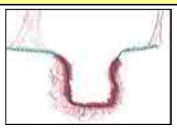
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/23/2024	Designated: CWF. MF	Existing:		
Latitude	40.793222°	Longitude	-77.661250°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
B. Hepler	S-LTZ-019-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Facing downstream. 1 = roads, 4 = grazed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	0%	0%	45%	0%	25%	0.37	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**5.40**	**0.00**	**0.00**	**1.80**	**0.00**	**0.25**		
Left Side	Condition Category								
	% Riparian Area:	10%	0%	0%	70%	0%	20%	0.23	CI = (Left Side CI + Right Side CI)/2 = 0.30
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**1.80**	**0.00**	**0.00**	**2.80**	**0.00**	**0.20**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads, 4 = grazed areas.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	0%	0%	40%	0%	30%	**0.37**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	0	0	4	0	1		
	Total Sub-score:	**5.40**	**0.00**	**0.00**	**1.60**	**0.00**	**0.30**		
	Condition Category								
Left Side	% Riparian Area:	40%	0%	0%	40%	0%	20%	**0.45**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	0	0	4	0	1		**0.41**
	Total Sub-score:	**7.20**	**0.00**	**0.00**	**1.60**	**0.00**	**0.20**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 11** → **0.55**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Road/culvert
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 12** → **0.60**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.52**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

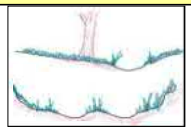
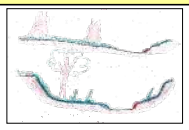
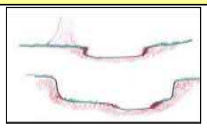
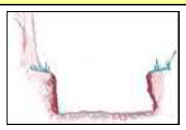
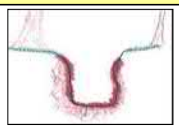
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.794141°	Longitude	-77.666070°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: UNT to Sinking Creek. Perennial watercourse.
AHE	S-LTZ-020-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2 = 0.84
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.75**
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.83**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

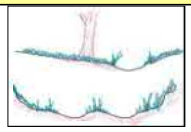
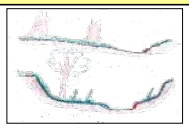
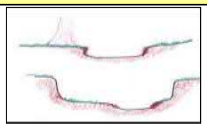
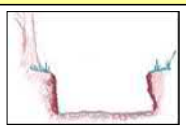
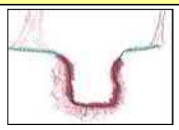
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.792282°	Longitude	-77.664581°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: UNT to Sinking Creek. Perennial watercourse.
AHE	S-LTZ-021-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%		
	Score:	18	14	0	0	0	0	**0.84**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%		
	Score:	18	14	0	0	0	0	**0.84**	**CI = (Left Side CI + Right Side CI)/2**
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		**CI: 0.84**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2** → **CI: 0.75**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **CI: 0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	**Low**	**High**	**Low**		
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **CI: 0.90**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.83**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

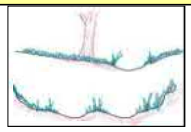
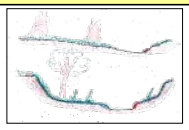
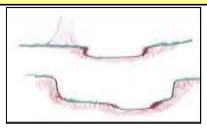
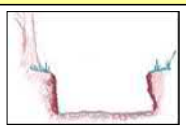
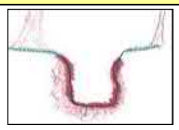
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.793738°	Longitude	-77.683439°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse.
AHE	S-LTZ-023-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	50%	50%	0%	0%	0%	0%	0.23	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**3.50**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	90%	10%	0%	0%	0%	0%	0.32	CI = (Left Side CI + Right Side CI)/2 = 0.27
	Score:	7	1	0	0	0	0		
	Total Sub-score:	**6.30**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	50%	0%	0%	0%	0%	**0.23**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**3.50**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	**0.29**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	7	1	0	0	0	0		**0.26**
	Total Sub-score:	**5.60**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** — **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.56**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

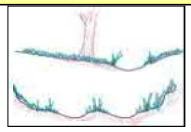
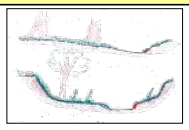
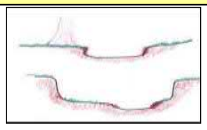
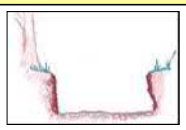
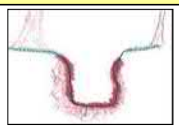
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.791801°	Longitude	-77.699289°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
AHE	Sleepy Creek (S-LTZ-025-PER)	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	40%	20%	10%	0%	0%	0.64	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**5.60**	**1.40**	**0.40**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	40%	20%	20%	0%	0%	0.57	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	4	0	0		CI: 0.61
	Total Sub-score:	**3.60**	**5.60**	**1.40**	**0.80**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	30%	40%	10%	0%	0%	**0.54**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	2	0	0		
	Total Sub-score:	**3.60**	**4.20**	**2.80**	**0.20**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	20%	40%	15%	5%	0%	**0.49**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.52**
	Score:	18	14	7	4	1	0		
	Total Sub-score:	**3.60**	**2.80**	**2.80**	**0.60**	**0.05**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 15** → **CI 0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culverts
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 15** → **CI 0.75**

RIVERINE CONDITION INDEX (RCI)	RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.64**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

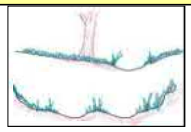
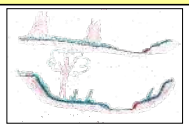
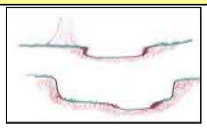
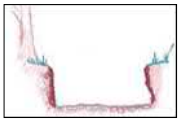
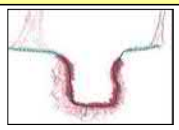
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.788434°	Longitude	-77.697846°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-027-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	20%	80%	0%	0%	0%	0%	0.42	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	14	7	0	0	0	0		
	Total Sub-score:	**2.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	80%	0%	0%	0%	0%	0.42	CI = (Left Side CI + Right Side CI)/2
	Score:	14	7	0	0	0	0		
	Total Sub-score:	**2.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.42

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	70%	10%	0%	0%	0%	**0.39**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	14	7	1	0	0	0		
	Total Sub-score:	**2.80**	**4.90**	**0.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	70%	10%	0%	0%	0%	**0.39**	**CI = (Left Side CI + Right Side CI)/2** → **CI: 0.39**
	Score:	14	7	1	0	0	0		
	Total Sub-score:	**2.80**	**4.90**	**0.10**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI: 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low			**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		**SCORE 17** → **CI: 0.85**

RIVERINE CONDITION INDEX (RCI)	RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.57**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

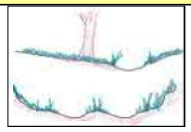
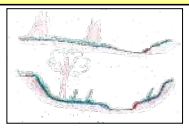
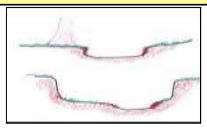
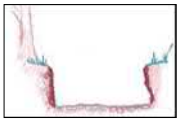
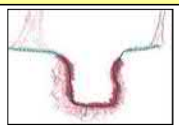
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.787270°	Longitude	-77.700149°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-028-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	13	0.65

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	70%	0%	0%	0%	0%	0.38	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	70%	0%	0%	0%	0%	0.38	CI = (Left Side CI + Right Side CI)/2 = 0.38
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	70%	0%	0%	0%	0%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	60%	10%	0%	0%	0%	**0.35**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	9	7	1	0	0	0		**0.37**
	Total Sub-score:	**2.70**	**4.20**	**0.10**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 15** — **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** — **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.61**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

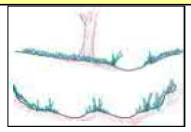
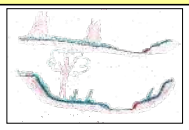
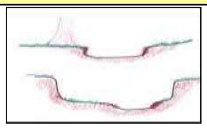
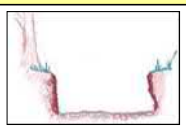
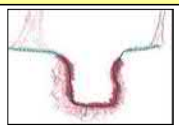
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.785094°	Longitude	-77.705045°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-029-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		CI: 0.77
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	20%	30%	20%	0%	0%	**0.56**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**2.80**	**2.10**	**0.80**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	10%	10%	0%	0%	**0.74**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	4	0	0		**0.65**
	Total Sub-score:	**10.80**	**2.80**	**0.70**	**0.40**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.78**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

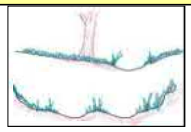
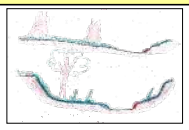
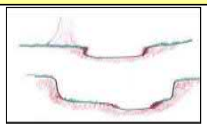
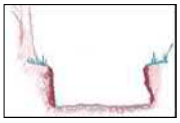
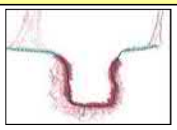
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.792495°	Longitude	-77.684168°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-030-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.				**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.				**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.				**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.				
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	50%	50%	0%	0%	0%	0%	0.28	CI = (Left Side CI + Right Side CI)/2
	Score:	7	4	0	0	0	0		
	Total Sub-score:	**3.50**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.31

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.31**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	7	4	0	0	0	0		
	Total Sub-score:	**4.90**	**1.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	50%	40%	10%	0%	0%	0%	**0.26**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	7	4	1	0	0	0		**0.28**
	Total Sub-score:	**3.50**	**1.60**	**0.10**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.61**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

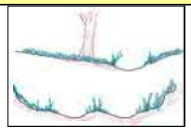
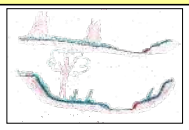
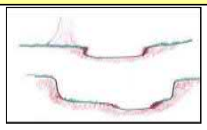
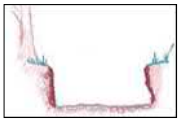
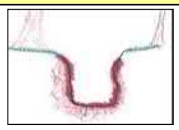
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.784755°	Longitude	--77.692813°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-031-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.76	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	1	0	0	0		
	Total Sub-score:	**14.40**	**0.70**	**0.10**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	40%	20%	10%	0%	0%	0.46	CI = (Left Side CI + Right Side CI)/2
	Score:	18	7	4	1	0	0		CI: 0.61
	Total Sub-score:	**5.40**	**2.80**	**0.80**	**0.10**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category										Comments:
	Optimal	Suboptimal		Marginal		Poor					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.76**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	1	0	0	0		
	Total Sub-score:	**14.40**	**0.70**	**0.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	50%	20%	0%	0%	0%	**0.49**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	7	4	0	0	0		**CI**
	Total Sub-score:	**5.40**	**3.50**	**0.80**	**0.00**	**0.00**	**0.00**		**0.62**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 15 **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category										Comments:
	Negligible	Minor		Moderate		Severe					
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.				**CI = (Score)/20** **CI**
		High	Low	High	Low						
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1					**SCORE** 15 **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.70**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

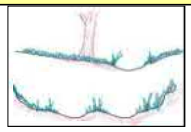
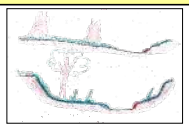
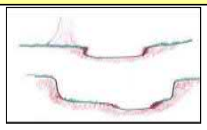
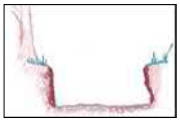
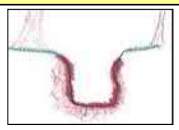
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.783690°	Longitude	-77.692971°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-032-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High		Low		High		Low			
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.90**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	0	0	0	0	0		
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.90**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	0	0	0	0	0		**CI**
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.90**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	**0.86**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	**0.68**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	7	0	0	0	0		**0.77**
	Total Sub-score:	**10.80**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		
		High	Low	High	Low		**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 15**	**0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.82**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

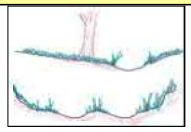
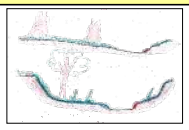
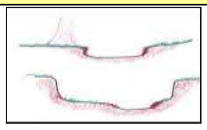
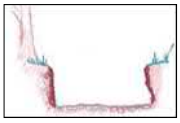
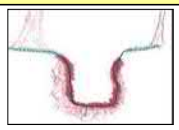
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.7940527°	Longitude	-77.6829862°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-033-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.				**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.				**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.				**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.				
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	90%	10%	0%	0%	0%	0%	0.33	CI = (Left Side CI + Right Side CI)/2 = 0.34
	Score:	7	2	0	0	0	0		
	Total Sub-score:	**6.30**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	60%	40%	0%	0%	0%	0%	**0.49**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	7	14	0	0	0	0		
	Total Sub-score:	**4.20**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	90%	20%	0%	0%	0%	0%	**0.34**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	7	2	0	0	0	0		**0.41**
	Total Sub-score:	**6.30**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.64**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

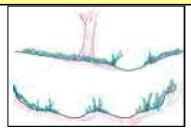
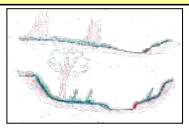
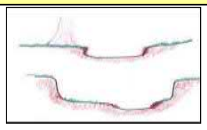
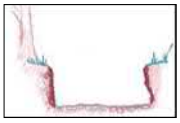
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.7919417°	Longitude	-77.6830639°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-034-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.			

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	60%	0%	0%	0%	0%	**0.57**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	0	0	0	0		
	Total Sub-score:	**7.20**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	30%	40%	0%	0%	0%	**0.40**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	14	7	4	0	0	0		**0.48**
	Total Sub-score:	**4.20**	**2.10**	**1.60**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.70**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

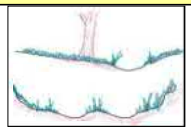
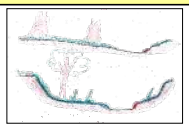
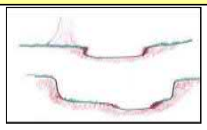
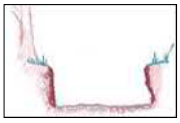
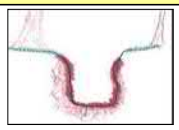
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	7/18/2023	Designated: HQ-CWF, MF	Existing:		
Latitude	40.779921°	Longitude	-77.779601°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Segment adjacent to Boal Ave
AHE	Spring Creek (S-LTZ-035-PER)	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	11	0.55

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	10%	0%	0%	0%	0.68	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	4	1	0	0	0		
	Total Sub-score:	**12.60**	**0.80**	**0.10**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.76	CI = (Left Side CI + Right Side CI)/2 = 0.72
	Score:	18	4	0	0	0	0		
	Total Sub-score:	**14.40**	**0.80**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

2/7/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	50%	30%	20%	0%	0%	0%	**0.52**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	4	1	0	0	0		
	Total Sub-score:	**9.00**	**1.20**	**0.20**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	30%	30%	0%	0%	0%	**0.44**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	4	1	0	0	0		**0.48**
	Total Sub-score:	**7.20**	**1.20**	**0.30**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 17 → **0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culverts/bridges
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE** 15 → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.67**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

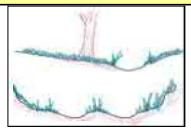
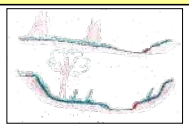
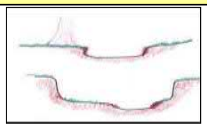
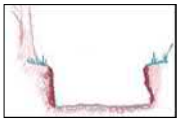
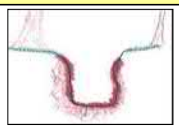
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.787756°	Longitude	-77.721036°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent Section of Spring Creek North of S.R. 322.
AHE	S-LTZ-035-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	20%	30%	20%	30%	0%	0%	0.42	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	9	7	2	0	0		
	Total Sub-score:	**3.60**	**2.70**	**1.40**	**0.60**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	20%	20%	40%	0%	0%	0.38	CI = (Left Side CI + Right Side CI)/2 = 0.40
	Score:	18	9	7	2	0	0		
	Total Sub-score:	**3.60**	**1.80**	**1.40**	**0.80**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	10%	10%	20%	60%	0%	0%	**0.27**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	9	7	2	0	0		
	Total Sub-score:	**1.80**	**0.90**	**1.40**	**1.20**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	10%	10%	20%	60%	0%	0%	**0.27**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	9	7	2	0	0		**0.27**
	Total Sub-score:	**1.80**	**0.90**	**1.40**	**1.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low			**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.54**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

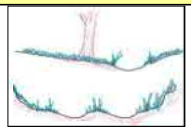
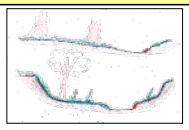
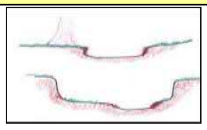
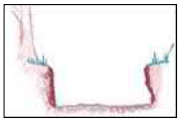
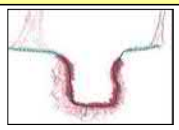
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: HQ-CWF, M	Existing:		
Latitude	40.784569°	Longitude	-77.734993°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Spring Creek section north of S.R. 322.
AHE	S-LTZ-035-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	**20 19 18 17**	**16 15 14 13**	**12 11 10 9**	**8 7 6 5**	**4 3 2 1**

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:** Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	**20 19 18 17 16**	**15 14 13**	**12 11**	**10 9 8**	**7 6**	**5 4 3**	**2 1**				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	20%	20%	30%	0%	0%	0.54	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**2.80**	**1.40**	**1.20**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	20%	20%	30%	0%	0%	0.54	CI = (Left Side CI + Right Side CI)/2 = 0.54
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**2.80**	**1.40**	**1.20**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	20%	30%	20%	10%	0%	**0.45**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	2	1	0		
	Total Sub-score:	**3.60**	**2.80**	**2.10**	**0.40**	**0.10**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	20%	20%	20%	20%	0%	**0.42**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	2	1	0		**0.44**
	Total Sub-score:	**3.60**	**2.80**	**1.40**	**0.40**	**0.20**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 18** → **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culverts/bridges, ag.
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 13** → **0.65**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.63**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

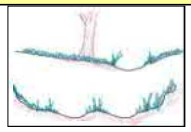
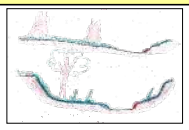
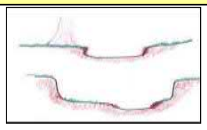
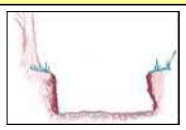
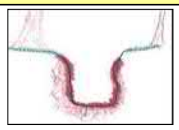
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: HQ-CWF, MF	Existing:		
Latitude	40.786927°	Longitude	-77.713787°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Spring Creek section south of S.R. 322
AHE	S-LTZ-035-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	10%	40%	10%	0%	0%	0.59	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**7.20**	**1.40**	**2.80**	**0.40**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	10%	50%	10%	0%	0%	0.54	CI = (Left Side CI + Right Side CI)/2 = 0.56
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**1.40**	**3.50**	**0.40**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	20%	20%	20%	0%	0%	**0.58**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**7.20**	**2.80**	**1.40**	**0.20**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	20%	40%	10%	0%	0%	**0.56**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.57**
	Total Sub-score:	**5.40**	**2.80**	**2.80**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** → **0.90**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Bridges/culverts
	Negligible	**Minor**		**Moderate**		**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	**Low**	**High**	**Low**		**SCORE 15** → **0.75**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.71**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

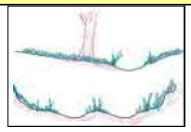
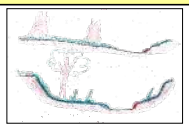
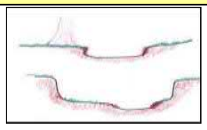
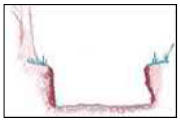
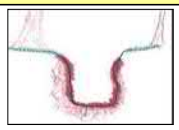
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.7864471°	Longitude	-77.6848851°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-037-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	CI = (Left Side CI + Right Side CI)/2
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.35

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	10%	80%	10%	0%	0%	0%	**0.36**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	14	7	1	0	0	0		
	Total Sub-score:	**1.40**	**5.60**	**0.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	10%	80%	10%	0%	0%	0%	**0.36**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	14	7	1	0	0	0		**0.36**
	Total Sub-score:	**1.40**	**5.60**	**0.10**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** — **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.64**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

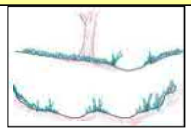
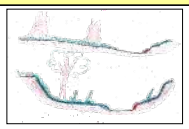
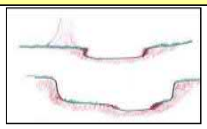
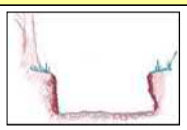
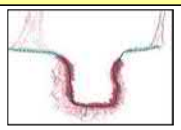
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	03/09/23	Designated: CWF, MF	Existing:		
Latitude	40.7798°	Longitude	-77.7610°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
C. Leslie	S-LTZ-038-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	13	0.65

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

Comments: 1 = roadways, 4 = mowed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	25%	10%	10%	5%	50%	0%		
	Score:	18	14	9	7	4	0	0.46	Side Sub-Index = SUM(%Areas*Scores)/20
	Total Sub-score:	**4.50**	**1.40**	**0.90**	**0.35**	**2.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	45%	0%	5%	0%	50%	0%		
	Score:	18	0	9	0	4	0	0.53	CI = (Left Side CI + Right Side CI)/2
	Total Sub-score:	**8.10**	**0.00**	**0.45**	**0.00**	**2.00**	**0.00**		CI: 0.49

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												Comments: 1 = roadways, 4 = mowed areas.
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
			High	**Low**	**High**	**Low**	**High**	**Low**					
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**						

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	5%	15%	5%	15%	45%	15%	**0.32**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**0.90**	**2.10**	**0.45**	**1.05**	**1.80**	**0.15**		
	Condition Category								
Left Side	% Riparian Area:	5%	15%	10%	15%	45%	10%	**0.34**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	9	7	4	1		**0.33**
	Total Sub-score:	**0.90**	**2.10**	**0.90**	**1.05**	**1.80**	**0.10**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 17**	**0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments: Culverts	
	Negligible	**Minor**		**Moderate**		**Severe**				
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.			
		High	**Low**	**High**	**Low**				**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**			**SCORE 14**	**0.70**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.61**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

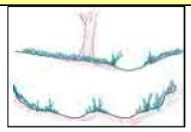
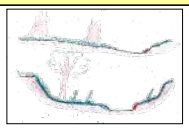
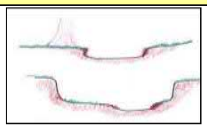
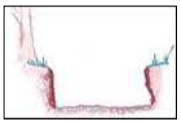
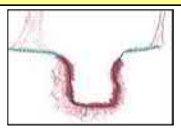
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	03/29/23	Designated: CWF, MF	Existing:		
Latitude	40.7764°	Longitude	-77.7394°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
C. Leslie	S-LTZ-039-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	11	0.55

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										Comments: 1 = roadways
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	40%	15%	5%	0%	0%	0.73	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.35**	**0.35**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	30%	15%	0%	5%	10%	0.65	CI = (Left Side CI + Right Side CI)/2 = 0.69
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**7.20**	**4.20**	**1.35**	**0.00**	**0.20**	**0.10**		

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments: 1 = buildings/roadways
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High / **Low**	**High** / **Low**	**High** / **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	50%	25%	10%	15%	0%	0%	**0.72**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	7	0	0		
	Total Sub-score:	**9.00**	**3.50**	**0.90**	**1.05**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	25%	10%	5%	0%	10%	**0.69**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	9	7	0	1		**0.71**
	Total Sub-score:	**9.00**	**3.50**	**0.90**	**0.35**	**0.00**	**0.10**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 17**	**0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments: Culvert	
	Negligible	**Minor**	**Moderate**	**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		
		High / **Low**	**High** / **Low**		**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 14**	**0.70**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.70**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

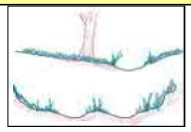
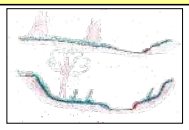
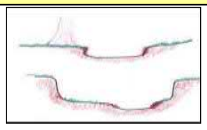
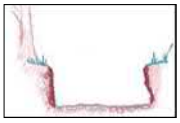
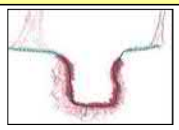
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.782030°	Longitude	-77.708132°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-040-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	10%	0%	0%	0%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**2.80**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	10%	10%	0%	0%	0.74	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	1	0	0		CI: 0.77
	Total Sub-score:	**12.60**	**1.40**	**0.70**	**0.10**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	20%	20%	10%	0%	0%	**0.67**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.71**
	Total Sub-score:	**9.00**	**2.80**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

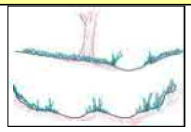
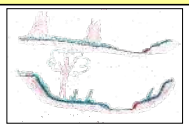
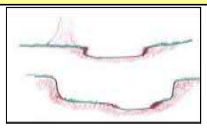
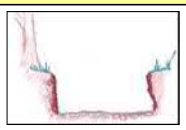
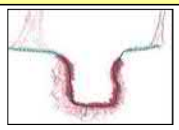
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.782378°	Longitude	-77.708527°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-041-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	10%	0%	0%	0%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**2.80**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	10%	10%	0%	0%	0.74	CI = (Left Side CI + Right Side CI)/2 = 0.77
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**12.60**	**1.40**	**0.70**	**0.10**	**0.00**	**0.00**		

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	20%	20%	10%	0%	0%	**0.67**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.71**
	Total Sub-score:	**9.00**	**2.80**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

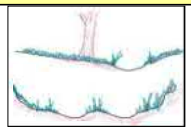
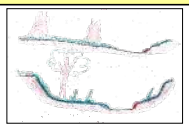
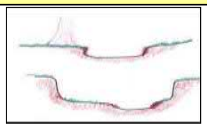
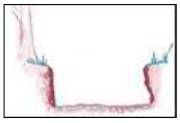
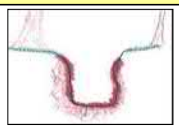
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7837468°	Longitude	-77.7081036°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-042-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	20%	10%	0%	0%	0%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**2.80**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	10%	10%	0%	0%	0.74	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	1	0	0		CI: 0.77
	Total Sub-score:	**12.60**	**1.40**	**0.70**	**0.10**	**0.00**	**0.00**		

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	20%	20%	10%	0%	0%	**0.67**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.71**
	Total Sub-score:	**9.00**	**2.80**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

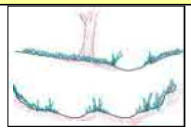
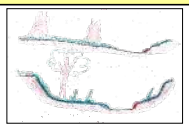
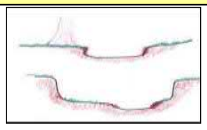
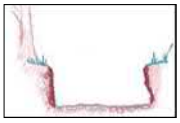
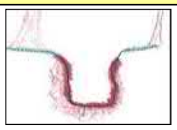
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.783998°	Longitude	-77.708030°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-043-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	0.75	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	20%	20%	0%	0%	0%	0.75	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		

CI
0.75

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.75**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 18** → **CI 0.90**

RIVERINE CONDITION INDEX (RCI)	**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.80**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

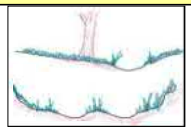
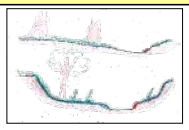
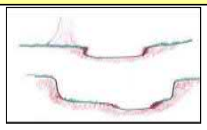
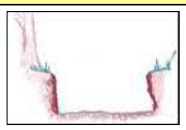
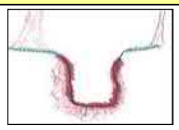
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7844745°	Longitude	-77.7081612°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-043-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	1	0	0		**CI**
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		**0.65**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High Low	High Low	High Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	30%	20%	10%	0%	0%	**0.65**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.65**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**7.20**	**4.20**	**1.40**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 15** → **CI 0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments: Culvert
	Negligible	Minor	Moderate	Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High Low	High Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 15** → **CI 0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.72**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

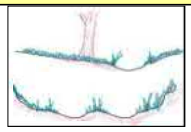
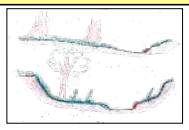
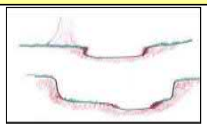
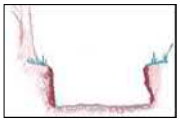
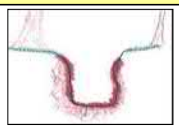
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.783517°	Longitude	-77.712399°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse.
AHE	S-LTZ-044-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.72	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	4	7	0	0	0		
	Total Sub-score:	**12.60**	**0.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.77
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category										Comments:
	Optimal	Suboptimal		Marginal		Poor					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1					

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	**0.55**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**4.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.66**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments:
	Negligible	Minor		Moderate		Severe			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.			
		High	Low	High	Low				**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1			**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.73**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

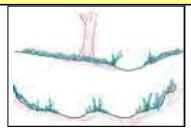
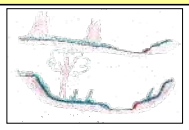
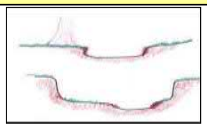
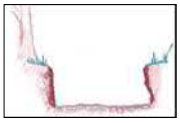
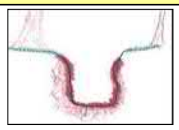
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.784433°	Longitude	-77.713350°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-045-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	50%	10%	10%	30%	0%	0%	0.67	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	0	0		
	Total Sub-score:	**9.00**	**1.40**	**0.90**	**2.10**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	10%	20%	10%	20%	0%	0.53	CI = (Left Side CI + Right Side CI)/2 = 0.60
	Score:	18	14	4	7	2	0		
	Total Sub-score:	**7.20**	**1.40**	**0.80**	**0.70**	**0.40**	**0.00**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	% Riparian Area:	40%	20%	30%	10%	0%	0%	**0.65**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	9	0	0		
	Total Sub-score:	**7.20**	**2.80**	**2.10**	**0.90**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	20%	20%	20%	20%	0%	**0.45**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	7	4	2	0		**0.55**
	Total Sub-score:	**3.60**	**2.80**	**1.40**	**0.80**	**0.40**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** — **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** — **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.72**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

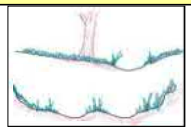
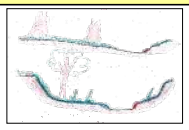
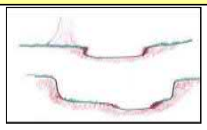
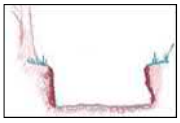
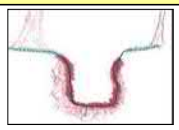
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7850279°	Longitude	-77.7091651°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-046-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	0.55	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**4.20**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	30%	10%	0%	0%	0%	0.79	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**4.20**	**0.70**	**0.00**	**0.00**	**0.00**		

CI
0.67

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	10%	70%	0%	0%	0%	**0.50**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**1.40**	**4.90**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		**0.62**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** **CI**
		High	**Low**	**High**	**Low**		**SCORE 18** **0.90**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

RIVERINE CONDITION INDEX (RCI)	**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** **0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

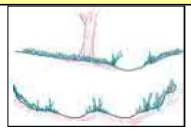
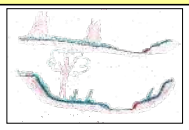
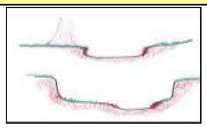
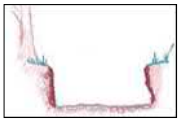
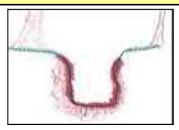
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7865813°	Longitude	-77.7115697°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-047-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	0.16	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	4	1	0	0	0		
	Total Sub-score:	**2.10**	**0.40**	**0.60**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.32	CI = (Left Side CI + Right Side CI)/2
	Score:	7	4	0	0	0	0		CI: 0.24
	Total Sub-score:	**5.60**	**0.80**	**0.00**	**0.00**	**0.00**	**0.00**		

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	30%	40%	0%	0%	0%	**0.19**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	7	4	1	0	0	0		
	Total Sub-score:	**2.10**	**1.20**	**0.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	90%	10%	0%	0%	0%	0%	**0.34**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.26**
	Score:	7	4	0	0	0	0		
	Total Sub-score:	**6.30**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **CI 0.75**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.46**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

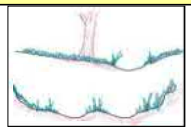
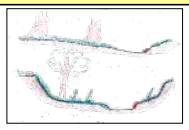
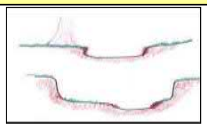
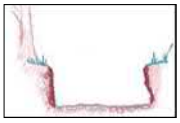
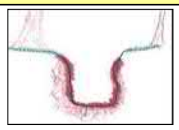
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7823802°	Longitude	-77.7118909°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-048-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.72	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	4	7	0	0	0		
	Total Sub-score:	**12.60**	**0.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		CI: 0.77
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category						Comments:
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	**0.55**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**4.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.66**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category						Comments:
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 16** → **CI 0.80**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.73**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

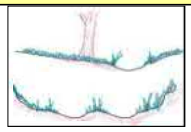
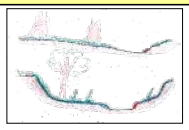
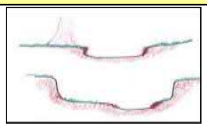
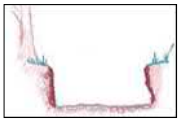
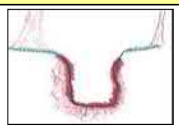
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778501°	Longitude	-77.720390°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-049-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High					Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.81	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	20%	20%	0%	0%	0%	0.75	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		

CI
0.78

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	10%	20%	10%	0%	0%	**0.69**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	4	7	0	0		**0.73**
	Total Sub-score:	**10.80**	**1.40**	**0.80**	**0.70**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.78**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

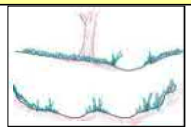
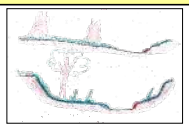
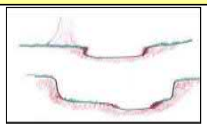
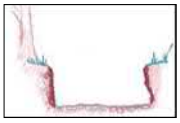
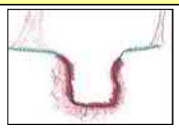
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.782137°	Longitude	-77.722774°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-050-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	10%	30%	0%	0%	0%	0.72	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**1.40**	**2.10**	**0.00**	**0.00**	**0.00**		

CI
0.74

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High 15 14 13	**Low** 12 11	**High** 10 9 8	**Low** 7 6	**High** 5 4 3	**Low** 2 1	
SCORE	20 19 18 17 16							

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.80**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 15 → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High 15 14 13	**Low** 12 11	**High** 10 9 8	**Low** 7 6	5 4 3 2 1		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16							**SCORE** 15 → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.77**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

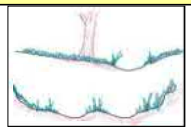
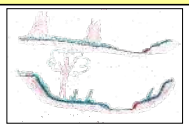
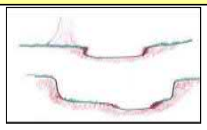
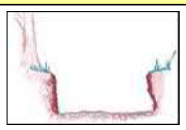
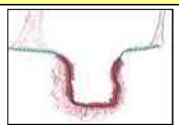
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.780906°	Longitude	-77.721398°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-051-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.80
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13**	**12 11**	**10 9 8**	**7 6**	**5 4 3**	**2 1**

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		**0.77**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13**	**12 11**	**10 9 8**	**7 6**	**5 4 3 2 1**	**SCORE 16**	**0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

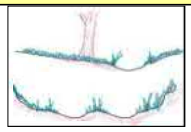
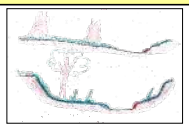
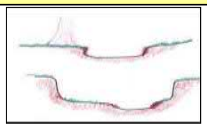
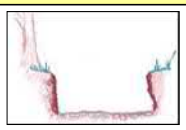
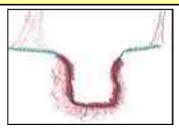
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778806°	Longitude	-77.721222°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
B. Hepler	S-LTZ-052-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2 = 0.84
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**CI = (Left Side CI + Right Side CI)/2** → **CI: 0.84**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 14** → **CI: 0.70**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** → **CI: 0.80**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.82**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

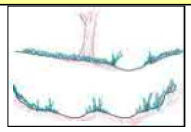
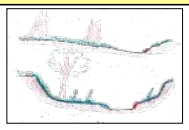
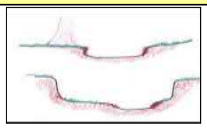
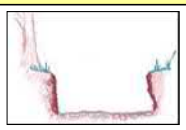
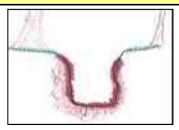
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778722°	Longitude	-77.721472°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
B. Hepler	S-LTZ-053-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments:**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	30%	0%	0%	0%	0%	0.84	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		CI: 0.84
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High Low	**High** Low	**High** Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	30%	0%	0%	0%	0%	**0.84**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.84**
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**12.60**	**4.20**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 14** → **CI 0.70**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High Low	**High** Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 16** → **CI 0.80**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.80**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

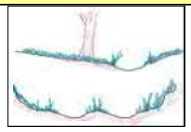
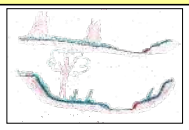
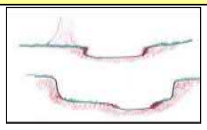
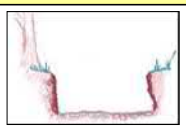
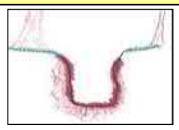
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781377°	Longitude	-77.722898°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-054-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category								Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	10%	30%	0%	0%	0%	**0.72**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**10.80**	**1.40**	**2.10**	**0.00**	**0.00**	**0.00**		**0.74**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		**0.80**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** **CI**
		High	**Low**	**High**	**Low**		**SCORE 15** **0.75**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

RIVERINE CONDITION INDEX (RCI)	**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** **0.77**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

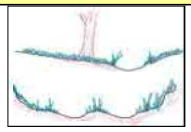
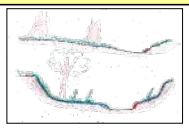
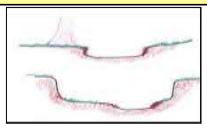
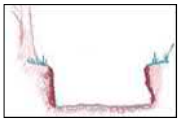
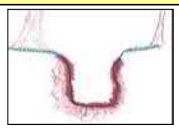
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778837°	Longitude	-77.722813°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-055-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	20%	40%	0%	0%	0%	0.64	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**2.80**	**2.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	20%	40%	0%	0%	0%	0.64	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**2.80**	**2.80**	**0.00**	**0.00**	**0.00**		

CI
0.64

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.71**
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

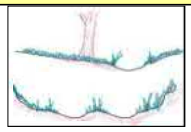
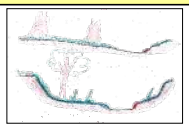
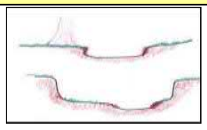
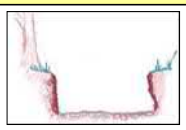
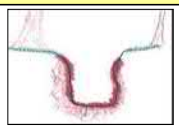
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778948°	Longitude	-77.723078°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-056-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	20%	40%	0%	0%	0%	0.64	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**2.80**	**2.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	20%	40%	0%	0%	0%	0.64	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**2.80**	**2.80**	**0.00**	**0.00**	**0.00**		

CI
0.64

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**CI = (Left Side CI + Right Side CI)/2** → **CI = 0.71**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **CI = 0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** → **CI = 0.80**

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **RCI = 0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

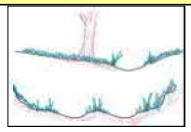
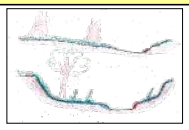
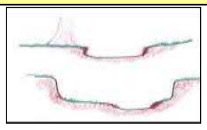
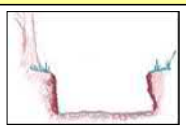
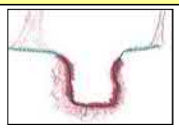
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.779620°	Longitude	-77.722380°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-057-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																	Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High			Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								Side Sub-Index = SUM(%Areas*Scores)/20
	% Riparian Area:	40%	40%	20%	0%	0%	0%	0.71	
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								CI = (Left Side CI + Right Side CI)/2
	% Riparian Area:	40%	40%	20%	0%	0%	0%	0.71	
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		

CI
0.71

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.71**	**CI = (Left Side CI + Right Side CI)/2** → **CI: 0.71**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI: 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 16** → **CI: 0.80**

RIVERINE CONDITION INDEX (RCI)	RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.76**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

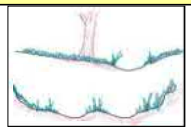
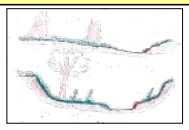
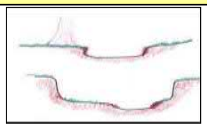
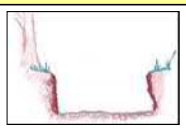
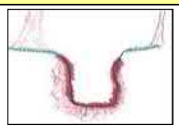
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781629°	Longitude	-77.724160°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-058-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	10%	30%	0%	0%	0%	**0.72**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**10.80**	**1.40**	**2.10**	**0.00**	**0.00**	**0.00**		**0.74**

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High 15 14 13	**Low** 12 11	**High** 10 9 8	**Low** 7 6	**High** 5 4 3	**Low** 2 1	
SCORE	20 19 18 17 16							

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.80**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** 15 → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High 15 14 13	**Low** 12 11	**High** 10 9 8	**Low** 7 6	5 4 3 2 1		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16							**SCORE** 15 → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.77**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

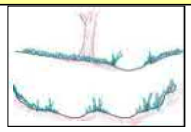
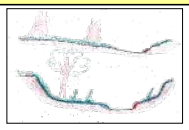
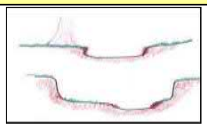
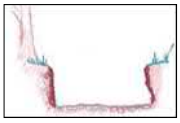
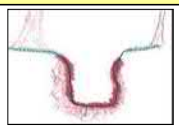
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.779248°	Longitude	-77.724262°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-059-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																	Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor			
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	20%	40%	10%	0%	0%	0.56	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**5.40**	**2.80**	**2.80**	**0.10**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	20%	40%	10%	0%	0%	0.56	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**5.40**	**2.80**	**2.80**	**0.10**	**0.00**	**0.00**		

CI
0.56

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02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	20%	20%	10%	0%	0%	**0.67**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**9.00**	**2.80**	**1.40**	**0.10**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	20%	20%	10%	0%	0%	**0.68**	**CI = (Left Side CI + Right Side CI)/2** → **CI: 0.67**
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**9.00**	**2.80**	**1.40**	**0.40**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **CI: 0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	**Low**	**High**	**Low**		**SCORE 15** → **CI: 0.75**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

RIVERINE CONDITION INDEX (RCI)	**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.70**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

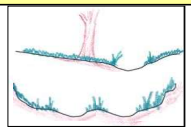
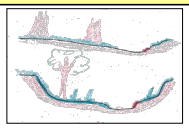
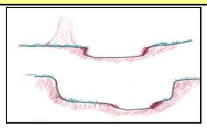
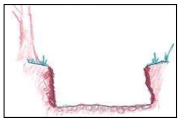
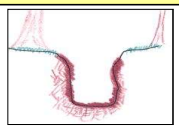
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.779720°	Longitude	-77.723707°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-060-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High					Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	10%	30%	0%	0%	0%	0.72	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**10.80**	**1.40**	**2.10**	**0.00**	**0.00**	**0.00**		

CI
0.74

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	60%	10%	20%	0%	0%	10%	**0.69**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	2		**CI**
	Total Sub-score:	**10.80**	**1.40**	**1.40**	**0.00**	**0.00**	**0.20**		**0.76**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:	
	Optimal	**Suboptimal**	**Marginal**	**Poor**		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15**	**0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	**Low**	**High**	**Low**			
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15**	**0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.76**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

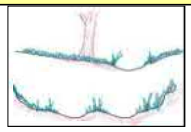
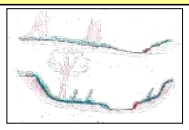
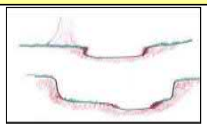
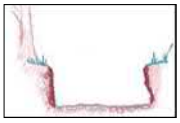
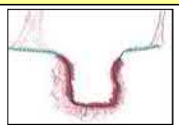
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.783361°	Longitude	-77.695556°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
B. Hepler	S-LTZ-061-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	20%	60%	20%	0%	0%	0%	0.69	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	0	0	0		
	Total Sub-score:	**3.60**	**8.40**	**1.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	50%	20%	0%	0%	0%	0.71	CI = (Left Side CI + Right Side CI)/2 = 0.70
	Score:	18	14	9	0	0	0		
	Total Sub-score:	**5.40**	**7.00**	**1.80**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	50%	20%	10%	0%	0%	**0.64**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	4	0	0		
	Total Sub-score:	**3.60**	**7.00**	**1.80**	**0.40**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	40%	40%	20%	0%	0%	0%	**0.73**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	9	0	0	0		**0.69**
	Total Sub-score:	**7.20**	**5.60**	**1.80**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 14** → **0.70**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.72**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

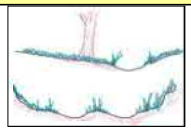
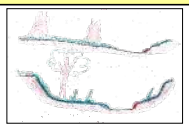
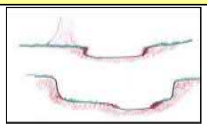
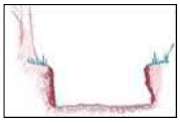
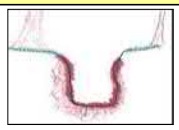
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7814881°	Longitude	-77.7254944°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-062-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	10%	10%	20%	0%	0%	0.69	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	4	0	0		CI: 0.73
	Total Sub-score:	**10.80**	**1.40**	**0.70**	**0.80**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	80%	10%	10%	0%	0%	0%	**0.83**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	50%	10%	10%	30%	0%	0%	**0.62**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	4	0	0		**0.72**
	Total Sub-score:	**9.00**	**1.40**	**0.70**	**1.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	Low	High	Low			
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 16**	**0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.76**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

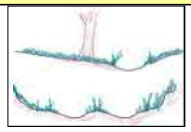
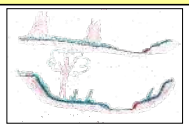
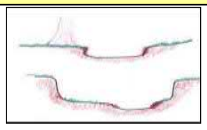
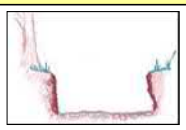
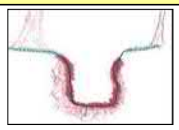
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781098°	Longitude	-77.724373°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-063-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.80
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	20%	30%	0%	0%	0%	**0.70**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**9.00**	**2.80**	**2.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.73**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.78**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

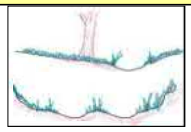
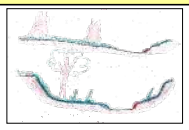
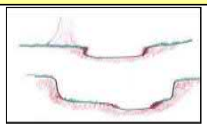
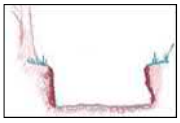
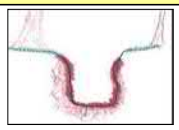
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	05/31/2024	Designated: CWF, MF	Existing:		
Latitude	40.7772°	Longitude	-77.7320°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-LTZ-064-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: 1 = roads/buildings, 4 = mowed areas.
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	0%	0%	5%	5%	85%	5%	0.21	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	0	0	9	7	4	1		
	Total Sub-score:	**0.00**	**0.00**	**0.45**	**0.35**	**3.40**	**0.05**		
	Condition Category								
Left Side	% Riparian Area:	50%	25%	15%	10%	0%	0%	0.73	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	7	0	0		CI: 0.47
	Total Sub-score:	**9.00**	**3.50**	**1.35**	**0.70**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads/buildings
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	25%	25%	5%	0%	40%	5%	**0.51**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**4.50**	**3.50**	**0.45**	**0.00**	**1.60**	**0.05**		
	Condition Category								
Left Side	% Riparian Area:	50%	25%	0%	24%	0%	1%	**0.71**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	0	7	0	1		**0.61**
	Total Sub-score:	**9.00**	**3.50**	**0.00**	**1.68**	**0.00**	**0.01**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culvert
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.64**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

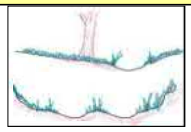
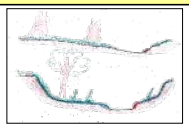
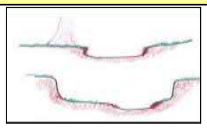
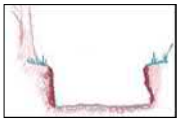
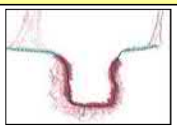
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781467°	Longitude	-77.720467°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-065-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.74	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**0.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		CI: 0.78
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	10%	40%	0%	0%	0%	**0.60**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**9.00**	**1.40**	**1.60**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.69**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	Low	High	Low			
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 16**	**0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.77**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

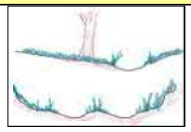
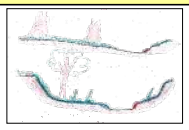
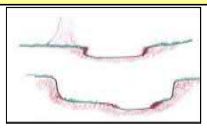
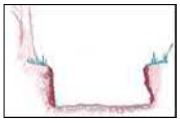
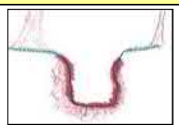
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7826762°	Longitude	-77.7213356°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-065-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	10%	20%	20%	50%	0%	0%	0.40	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**1.80**	**2.80**	**1.40**	**2.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		CI: 0.59
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	10%	10%	10%	10%	60%	0%	**0.32**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	4	0		
	Total Sub-score:	**1.80**	**1.40**	**0.70**	**0.10**	**2.40**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.55**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 13** → **0.65**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.66**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

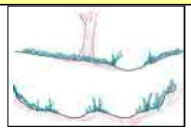
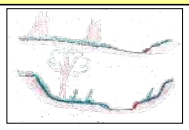
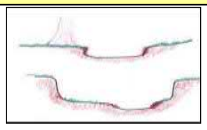
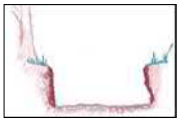
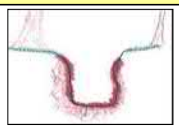
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781051°	Longitude	-77.719682°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-LTZ-066-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category															
	Optimal				Suboptimal				Marginal				Poor			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.80
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.77**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

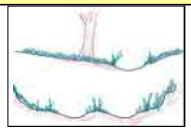
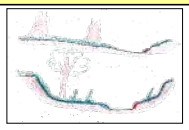
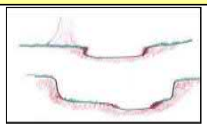
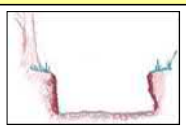
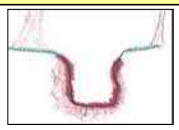
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781312°	Longitude	-77.718318°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-067-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9	8 7 6	5 4	3 2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.71	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	4	0	0	0		
	Total Sub-score:	**12.60**	**0.70**	**0.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	CI = (Left Side CI + Right Side CI)/2 = 0.74
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	10%	30%	0%	0%	0%	**0.67**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**10.80**	**1.40**	**1.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.72**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 13** → **0.65**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

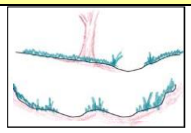
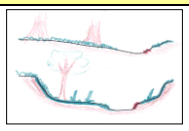
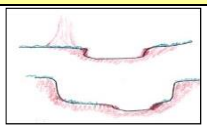
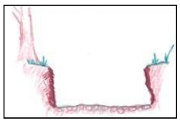
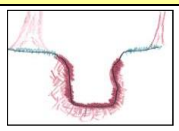
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7813°	Longitude	-77.7195°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Intermittent section.
AHE	S-LTZ-067-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Facing downstream

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category						Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.71
	Score:	18	7	4	0	0	0	Side Sub-Index = SUM(%Areas*Scores)/20
	Total Sub-score:	**12.60**	**0.70**	**0.80**	**0.00**	**0.00**	**0.00**	
	Condition Category							
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77
	Score:	18	14	7	0	0	0	CI = (Left Side CI + Right Side CI)/2
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**	CI: 0.74

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	10%	30%	0%	0%	0%	**0.67**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**10.80**	**1.40**	**1.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.72**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 18** → **CI 0.90**

RIVERINE CONDITION INDEX (RCI)	RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.78**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

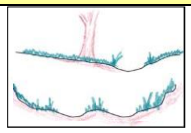
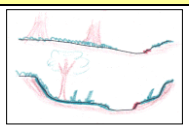
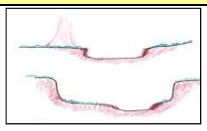
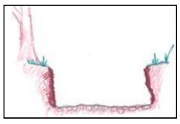
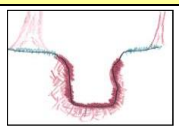
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	06/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.781312°	Longitude	-77.718318°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-068-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										Comments: Facing downstream
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.71	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	7	4	0	0	0		
	Total Sub-score:	**12.60**	**0.70**	**0.80**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	CI = (Left Side CI + Right Side CI)/2 = 0.74
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	60%	10%	30%	0%	0%	0%	**0.67**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**10.80**	**1.40**	**1.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.72**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 13** → **0.65**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

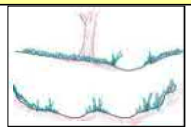
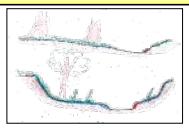
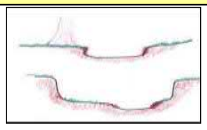
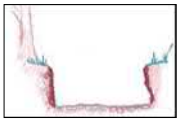
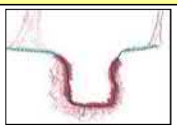
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7818145°	Longitude	-77.7182569°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-069-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.74	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**0.80**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		CI: 0.78
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category						Comments:
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	10%	40%	0%	0%	0%	**0.60**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**9.00**	**1.40**	**1.60**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.69**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.77**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

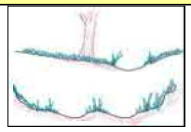
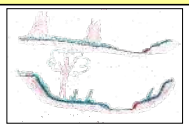
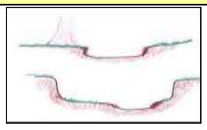
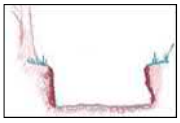
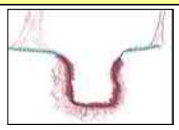
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	07/17/2023	Designated: CWF, MF	Existing:		
Latitude	40.7783°	Longitude	-77.7429°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-LTZ-070-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	12	0.60

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: 1 = roads/buildings, 4 = mowed areas.
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	10%	15%	10%	15%	40%	10%	0.38	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**1.80**	**2.10**	**0.90**	**1.05**	**1.60**	**0.10**		
Left Side	Condition Category								
	% Riparian Area:	10%	15%	15%	10%	40%	10%	0.38	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	7	4	1		CI: 0.38
	Total Sub-score:	**1.80**	**2.10**	**1.35**	**0.70**	**1.60**	**0.10**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads/buildings, 4 = mowed areas.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	10%	15%	15%	10%	40%	10%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**1.80**	**2.10**	**1.35**	**0.70**	**1.60**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	5%	15%	15%	10%	45%	10%	**0.35**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	9	7	4	1		**0.37**
	Total Sub-score:	**0.90**	**2.10**	**1.35**	**0.70**	**1.80**	**0.10**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Culverts, dredging	
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	Low	High	Low			
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 12**	**0.60**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.49**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

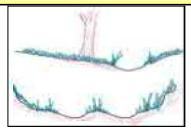
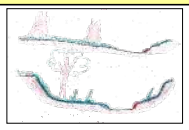
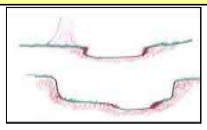
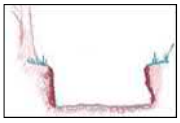
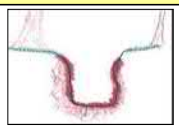
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	07/17/2023	Designated: CWF, MF	Existing:		
Latitude	40.7781°	Longitude	-77.7423°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
C. Leslie	S-LTZ-071-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	11	0.55

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					
	Optimal					Suboptimal					Marginal				Poor							
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High					Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

Comments: 1 = roads/buildings, 4 = mowed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	5%	10%	20%	15%	35%	15%	0.34	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**0.90**	**1.40**	**1.80**	**1.05**	**1.40**	**0.15**		
	Condition Category								
Left Side	% Riparian Area:	60%	25%	10%	0%	5%	0%	0.77	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	0	4	0		CI: 0.55
	Total Sub-score:	**10.80**	**3.50**	**0.90**	**0.00**	**0.20**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: 1 = roads/buildings, 4 = mowed areas.
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	% Riparian Area:	5%	10%	20%	15%	40%	10%	**0.34**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**0.90**	**1.40**	**1.80**	**1.05**	**1.60**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	40%	20%	0%	20%	20%	0%	**0.61**	**CI = (Left Side CI + Right Side CI)/2** — **CI**
	Score:	18	14	0	7	4	0		**0.48**
	Total Sub-score:	**7.20**	**2.80**	**0.00**	**1.40**	**0.80**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** — **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** — **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 16** — **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.59**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

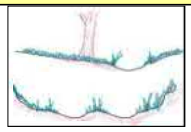
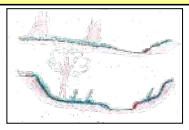
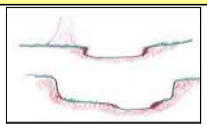
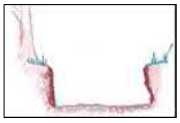
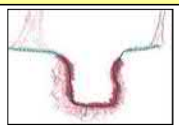
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.778278°	Longitude	-77.750234°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-073-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	10%	50%	10%	0%	0%	0.54	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**5.40**	**1.40**	**3.50**	**0.40**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	20%	60%	0%	0%	0%	0.53	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**2.80**	**4.20**	**0.00**	**0.00**	**0.00**		

CI
0.53

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	20%	10%	50%	20%	0%	0%	**0.47**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	4	0	0		
	Total Sub-score:	**3.60**	**1.40**	**3.50**	**0.80**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	10%	70%	0%	0%	0%	**0.50**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.48**
	Total Sub-score:	**3.60**	**1.40**	**4.90**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.66**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

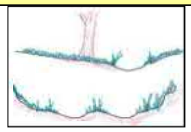
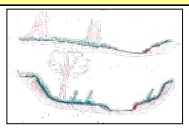
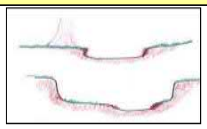
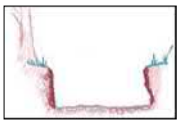
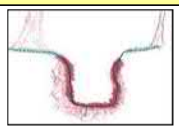
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	07/18/23	Designated: CWF, MF	Existing:		
Latitude	40.7784°	Longitude	-77.7588°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent section of watercourse
C. Leslie	S-LTZ-074-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
					
Channel / Floodplain	**Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	**Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	**Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	**Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	**Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	14	0.70

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
		High Suboptimal: Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.										
		High	**Low**	**High**	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

Comments: 1 = roadways, 4 = mowed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	25%	15%	10%	15%	20%	15%	0.48	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**4.50**	**2.10**	**0.90**	**1.05**	**0.80**	**0.15**		
Left Side	Condition Category								
	% Riparian Area:	35%	15%	15%	0%	20%	15%	0.54	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	0	4	1		
	Total Sub-score:	**6.30**	**2.10**	**1.35**	**0.00**	**0.80**	**0.15**		

CI
0.51

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category												Comments: 1 = roadways, 4 = mowed areas.
	Optimal		**Suboptimal**		**Marginal**		**Poor**						
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
			High	**Low**	**High**	**Low**	**High**	**Low**					
SCORE	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6		5 4 3 2 1						

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	0%	15%	15%	20%	30%	20%	**0.31**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	0	14	9	7	4	1		
	Total Sub-score:	**0.00**	**2.10**	**1.35**	**1.40**	**1.20**	**0.20**		
	Condition Category								
Left Side	% Riparian Area:	25%	15%	10%	10%	25%	15%	**0.47**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	9	7	4	1		**CI**
	Total Sub-score:	**4.50**	**2.10**	**0.90**	**0.70**	**1.00**	**0.15**		**0.39**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE** **0** **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category								Comments: Culverts
	Negligible	**Minor**		**Moderate**		**Severe**			
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.		**CI = (Score)/20** **CI**
		High	**Low**	**High**	**Low**				
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1			**SCORE** **14** **0.70**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.57**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

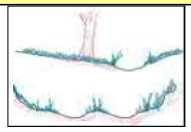
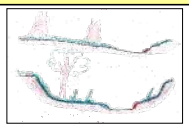
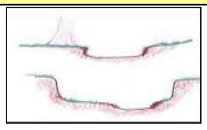
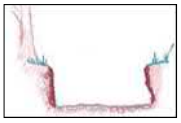
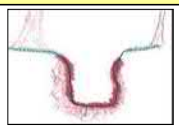
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.776758°	Longitude	-77.750991°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-075-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	10%	60%	0%	0%	0%	0.55	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**1.40**	**4.20**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	20%	20%	60%	0%	0%	0%	0.53	CI = (Left Side CI + Right Side CI)/2 = CI: 0.54
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**2.80**	**4.20**	**0.00**	**0.00**	**0.00**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13**	**12 11**	**10 9 8**	**7 6**	**5 4 3**	**2 1**

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	20%	60%	0%	0%	0%	**0.53**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**2.80**	**4.20**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	10%	70%	0%	0%	0%	**0.50**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.51**
	Total Sub-score:	**3.60**	**1.40**	**4.90**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13**	**12 11**	**10 9 8**	**7 6**	**5 4 3**	**2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.67**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

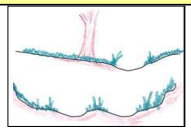
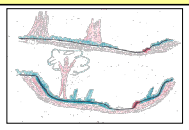
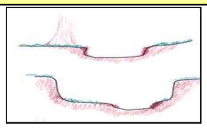
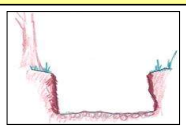
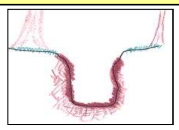
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.782859°	Longitude	-77.696623°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-LTZ-076-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										**Comments: Facing downstream**
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	40%	30%	30%	0%	0%	0%	**0.68**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**4.20**	**2.10**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	30%	30%	0%	0%	0%	**0.68**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**4.20**	**2.10**	**0.00**	**0.00**	**0.00**		**CI: 0.68**

Riverine Assessment Form 1 - Page 2

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	**Low**	**High**	**Low**	**High**	**Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	30%	30%	30%	10%	0%	0%	**0.59**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	1	0	0		
	Total Sub-score:	**5.40**	**4.20**	**2.10**	**0.10**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	30%	30%	10%	0%	0%	**0.59**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	1	0	0		**0.59**
	Total Sub-score:	**5.40**	**4.20**	**2.10**	**0.10**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** → **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** → **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.75**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

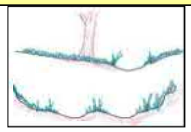
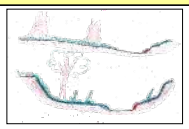
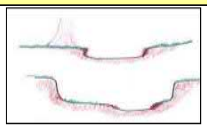
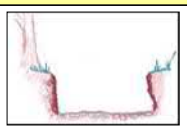
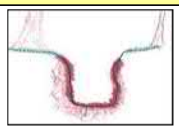
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	03/29/23	Designated: HQ-CWF, MF	Existing:		
Latitude	40.7779°	Longitude	-77.7691°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes:
C. Leslie	Galbraith Gap Run (S-LTZ-077-PER)	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments:

CI = (Score)/20	CI
SCORE 9	0.45

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category										
	Optimal	**Suboptimal**		**Marginal**		**Poor**					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
		High	Low	High	Low	High	Low				
SCORE	20 19 18 17 16	15 14 13	12 11	10 9 8	7 6	5 4 3	2 1				

Comments: 1 = roadways/buildings, 4 = mowed areas.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	15%	10%	15%	20%	10%	0.52	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**5.40**	**2.10**	**0.90**	**1.05**	**0.80**	**0.10**		
Left Side	Condition Category								
	% Riparian Area:	30%	15%	15%	0%	25%	15%	0.50	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	9	0	4	1		CI: 0.51
	Total Sub-score:	**5.40**	**2.10**	**1.35**	**0.00**	**1.00**	**0.15**		

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category																				**Comments:** 1 = buildings/roadways, 4 = mowed areas.
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
						High		**Low**			**High**		**Low**			**High**		**Low**			
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	40%	20%	10%	10%	10%	10%	**0.61**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	9	7	4	1		
	Total Sub-score:	**7.20**	**2.80**	**0.90**	**0.70**	**0.40**	**0.10**		
	Condition Category								
Left Side	% Riparian Area:	15%	15%	20%	10%	25%	15%	**0.42**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	9	7	4	1		**CI**
	Total Sub-score:	**2.70**	**2.10**	**1.80**	**0.70**	**1.00**	**0.15**		**0.51**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category																				**Comments:**
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.						**CI = (Score)/20**	**CI**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE** **17**	**0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category																				**Comments:** Culvert, multiple dams, concrete
	Negligible					**Minor**					**Moderate**					**Severe**					
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.					**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.		**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.			**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.		**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.		Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.						**CI = (Score)/20**	**CI**
						High		**Low**			**High**		**Low**									
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**SCORE** **7**	**0.35**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.53**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

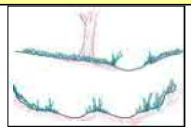
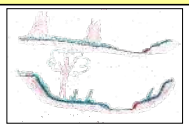
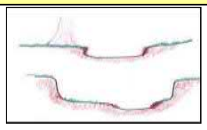
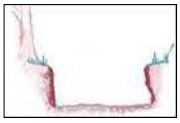
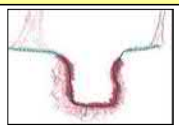
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.782369°	Longitude	-77.722275°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-078-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.72	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	4	7	0	0	0		
	Total Sub-score:	**12.60**	**0.40**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	10%	10%	0%	0%	0%	0.83	CI = (Left Side CI + Right Side CI)/2 = 0.77
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**14.40**	**1.40**	**0.70**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							**Side Sub-Index**	
Right Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.77**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 16** → **0.80**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.79**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

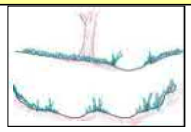
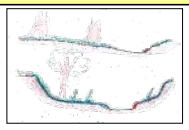
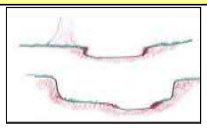
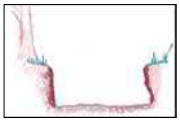
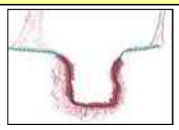
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.783197°	Longitude	-77.722459°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-079-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	50%	20%	30%	0%	0%	0%	0.65	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**9.00**	**2.80**	**1.20**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	0.77	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

CI
0.71

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	30%	10%	40%	10%	10%	0%	**0.46**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	1	7	0		
	Total Sub-score:	**5.40**	**1.40**	**1.60**	**0.10**	**0.70**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	70%	10%	20%	0%	0%	0%	**0.77**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	0	0	0		**0.62**
	Total Sub-score:	**12.60**	**1.40**	**1.40**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 13** → **0.65**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
***NOTE:* The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.70**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

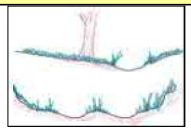
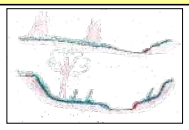
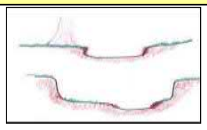
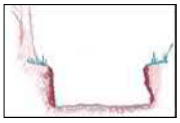
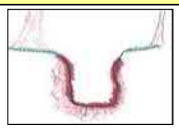
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/19/2024	Designated: CWF, MF	Existing:		
Latitude	40.7832782°	Longitude	-77.7315526°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-080-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	15	0.75

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	50%	20%	30%	0%	0%	0%	0.70	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**9.00**	**2.80**	**2.10**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	10%	10%	80%	0%	0%	0%	0.44	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**1.80**	**1.40**	**5.60**	**0.00**	**0.00**	**0.00**		

CI
0.57

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	50%	20%	30%	0%	0%	0%	**0.70**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**9.00**	**2.80**	**2.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	10%	10%	20%	60%	0%	0%	**0.35**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	4	0	0		**0.52**
	Total Sub-score:	**1.80**	**1.40**	**1.40**	**2.40**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 0** → **0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** → **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 15** → **0.75**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.65**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

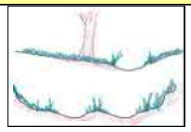
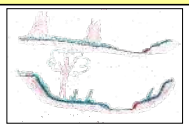
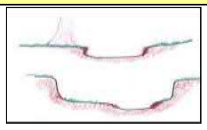
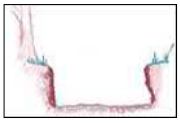
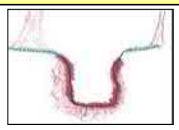
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.7862678°	Longitude	-77.6846991°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes:
AHE	S-LTZ-081-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	17	0.85

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																					Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.35	CI = (Left Side CI + Right Side CI)/2
	Score:	7	0	0	0	0	0		
	Total Sub-score:	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		

CI
0.35

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	10%	80%	10%	0%	0%	0%	**0.36**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	14	7	1	0	0	0		
	Total Sub-score:	**1.40**	**5.60**	**0.10**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	10%	80%	10%	0%	0%	0%	**0.36**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	14	7	1	0	0	0		**CI**
	Total Sub-score:	**1.40**	**5.60**	**0.10**	**0.00**	**0.00**	**0.00**		**0.36**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.64**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

Pennsylvania Department of Environmental Protection

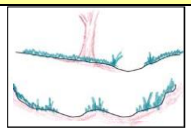
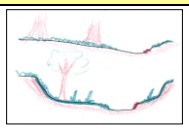
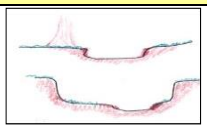
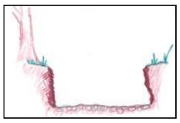
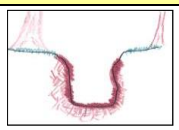
For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	07/19/2024	Designated: HQ-CWF, MF	Existing:		

Latitude	40.7777°	Longitude	-77.7692°	FGM Level 1 Channel Classification

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse discharging from WL-LTZ-151-POW
CML	S-LTZ-082-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments: Channel is concrete lined.

CI = (Score)/20		CI
SCORE	7	0.35

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. / **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. / **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. / **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
SCORE	20 19 18 17 16	High: 15 14 13 12 11 / Low: 10 9 8 7 6	High: 5 4 3 / Low: 2 1		

Comments: Facing downstream

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category						Side Sub-Index	
Right Side	% Riparian Area:	0%	5%	0%	0%	0%	95%	0.23
	Score:	0	14	0	0	0	4	Side Sub-Index = SUM(%Areas*Scores)/20
	Total Sub-score:	**0.00**	**0.70**	**0.00**	**0.00**	**0.00**	**3.80**	
	Condition Category							
Left Side	% Riparian Area:	0%	0%	0%	0%	95%	5%	0.19
	Score:	0	0	0	0	4	1	CI = (Left Side CI + Right Side CI)/2
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**0.00**	**3.80**	**0.05**	CI: 0.21

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High Low	**High** Low	**High** Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	0%	5%	40%	0%	10%	85%	**0.24**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	0	14	0	0	7	4		
	Total Sub-score:	**0.00**	**0.70**	**0.00**	**0.00**	**0.70**	**3.40**		
Left Side	Condition Category								
	% Riparian Area:	0%	0%	0%	0%	50%	50%	**0.13**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	0	0	0	0	4	1		**0.18**
	Total Sub-score:	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**	**0.50**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 17** → **0.85**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments: Fully concrete lined.
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High Low	**High** Low		**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 2** → **0.10**

RIVERINE CONDITION INDEX (RCI)	**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5** → **0.34**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

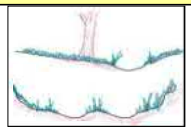
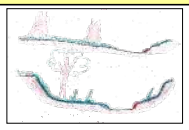
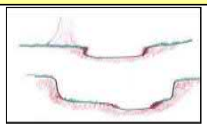
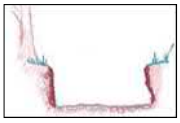
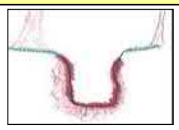
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.783549°	Longitude	-77.703213°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-091-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	40%	40%	20%	0%	0%	0%	0.71	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**7.20**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		

CI
0.79

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	20%	30%	50%	0%	0%	0%	**0.49**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	4	0	0	0		
	Total Sub-score:	**3.60**	**4.20**	**2.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	10%	30%	20%	40%	0%	0%	**0.45**	**CI = (Left Side CI + Right Side CI)/2** → **CI**
	Score:	18	14	7	4	0	0		**0.47**
	Total Sub-score:	**1.80**	**4.20**	**1.40**	**1.60**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent Flow Regime.	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0**	**0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20**	**CI**
		High	Low	High	Low			
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 18**	**0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

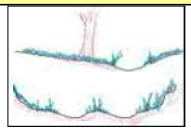
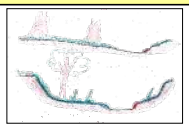
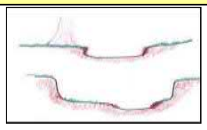
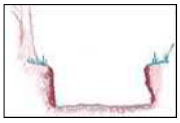
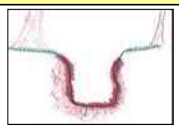
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector	Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.7892791°	Longitude	-77.6895381°	FGM Level 1 Channel Classification			

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-092-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	18	0.90

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	60%	40%	0%	0%	0%	0%	0.82	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	0	0	0	0		
	Total Sub-score:	**10.80**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	80%	20%	0%	0%	0%	0%	0.86	CI = (Left Side CI + Right Side CI)/2
	Score:	18	14	0	0	0	0		CI: 0.84
	Total Sub-score:	**14.40**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	**Suboptimal**		**Marginal**		**Poor**		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	**Low**	**High**	**Low**	**High**	**Low**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	30%	40%	0%	0%	0%	**0.62**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**5.40**	**4.20**	**2.80**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	60%	20%	20%	0%	0%	0%	**0.75**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	14	7	0	0	0		**CI**
	Total Sub-score:	**10.80**	**2.80**	**1.40**	**0.00**	**0.00**	**0.00**		**0.69**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments:
	Negligible	**Minor**		**Moderate**		**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	**Low**	**High**	**Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.82**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

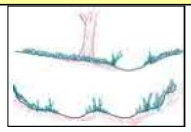
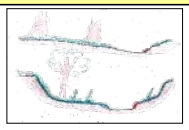
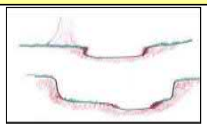
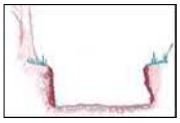
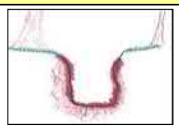
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/16/2024	Designated: CWF, MF	Existing:		
Latitude	40.787986°	Longitude	-77.698790°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Perennial watercourse
AHE	S-LTZ-095-PER	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	13	0.65

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal				Poor						
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low				High				Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	30%	70%	0%	0%	0%	0%	0.38	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	30%	70%	0%	0%	0%	0%	0.38	CI = (Left Side CI + Right Side CI)/2 = 0.38
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High **Low**	**High** **Low**	**High** **Low**	
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	70%	0%	0%	0%	0%	**0.38**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	9	7	0	0	0	0		
	Total Sub-score:	**2.70**	**4.90**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	30%	60%	10%	0%	0%	0%	**0.35**	**CI = (Left Side CI + Right Side CI)/2** **CI** **0.37**
	Score:	9	7	1	0	0	0		
	Total Sub-score:	**2.70**	**4.20**	**0.10**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments:
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 15** **0.75**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category				Comments:
	Negligible	**Minor**	**Moderate**	**Severe**	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present. **Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered. **Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High **Low**	**High** **Low**		**CI = (Score)/20** **CI**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**	**SCORE 18** **0.90**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.61**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

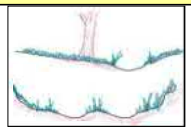
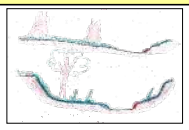
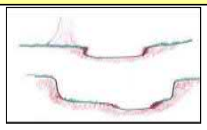
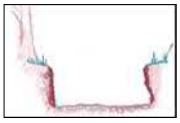
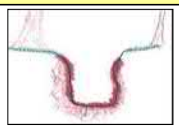
Pennsylvania Department of Environmental Protection

For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name		Locality	Date	Ch 93 Classification		AA Id	Length
JN197202	State College Area Connector		Centre County	02/15/2024	Designated: CWF, MF	Existing:		
Latitude	40.7971334°	Longitude	-77.6427608°	FGM Level 1 Channel Classification				

Evaluator(s)	Stream Name and Information	Notes: Intermittent watercourse
AHE	S-LTZ-100-INT	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category																			
	Optimal				Suboptimal				Marginal				Poor				Severe			
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.				 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.				 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.				 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.			
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

CI = (Score)/20		CI
SCORE	16	0.80

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category																				Comments: Facing downstream
	Optimal					Suboptimal					Marginal					Poor					
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
						High					Low					High					Low				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	20%	40%	20%	0%	0%	0%	0.53	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	14	7	0	0	0		
	Total Sub-score:	**3.60**	**5.60**	**1.40**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	50%	50%	0%	0%	0%	0%	0.20	CI = (Left Side CI + Right Side CI)/2
	Score:	7	1	0	0	0	0		CI: 0.37
	Total Sub-score:	**3.50**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**		

Riverine Assessment Form 1 - Page 2

02/15/2024

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments:
	Optimal	Suboptimal		Marginal		Poor		
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
		High	Low	High	Low	High	Low	
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1		

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
	Condition Category								
Right Side	% Riparian Area:	30%	60%	10%	0%	0%	0%	**0.49**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	7	1	0	0	0		
	Total Sub-score:	**5.40**	**4.20**	**0.10**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	20%	30%	30%	20%	0%	0%	**0.36**	**CI = (Left Side CI + Right Side CI)/2** → **CI 0.42**
	Score:	18	7	4	1	0	0		
	Total Sub-score:	**3.60**	**2.10**	**1.20**	**0.20**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: No score due to Intermittent flow regime.
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20** → **CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE 0** → **CI 0.00**

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: Located in a roadside ditch.
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not present.	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	**CI = (Score)/20** → **CI**
		High	Low	High	Low		
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 11** → **CI 0.55**

RIVERINE CONDITION INDEX (RCI)	RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4** → **0.53**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

APPENDIX E –
REPRESENTATIVE PHOTOGRAPH LOG



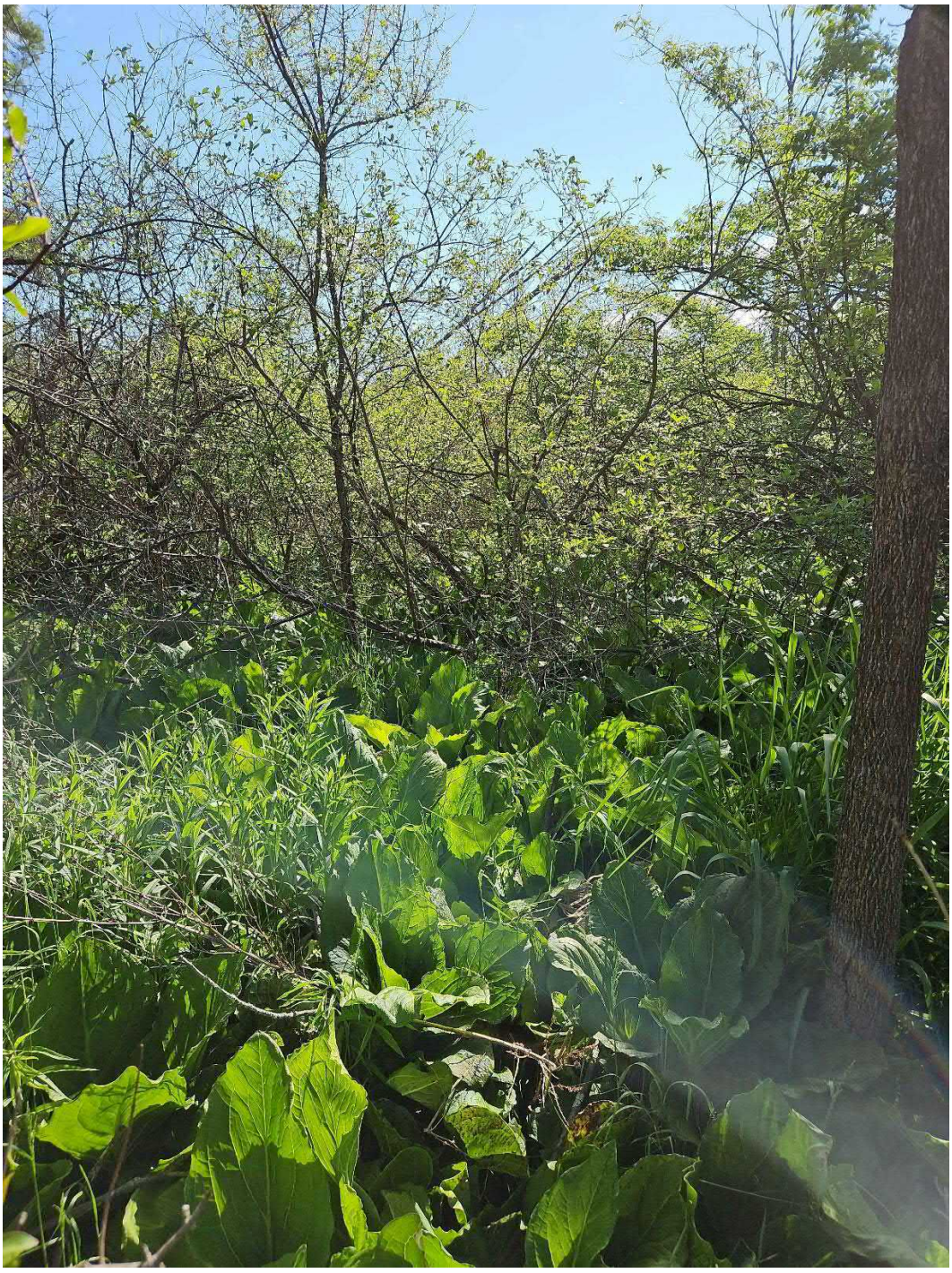
Photograph No. 1 – Facing northwest at a portion of WL LTZ-035, representing a Large Floodplain system.



Photograph No. 2 – Facing south/southeast at a portion of WL LTZ-038, representing a Large Floodplain system.



Photograph No. 3 – Facing southwest at a portion of WL LTZ-067, representing a Large Floodplain system.



Photograph No. 4 – Facing southeast at a portion of WL LTZ-110, representing a Large Floodplain system.



Photograph No. 5 – Facing south at a portion of WL DJW-004, representing a Small Floodplain system.



Photograph No. 6 – Facing west/southwest at a portion of WL LTZ-166, representing a Small Floodplain system

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Photograph No. 7 – Facing southwest at a portion of WL BPH-007, representing a Small Floodplain system.



Photograph No. 8 – Facing west at a portion of WL LTZ-021, representing a depressional system.



Photograph No. 9 – Facing west at a portion of WL LTZ-026, representing a depressional system.



Photograph No. 10 – Facing south at a portion of WL LTZ-127, representing a depressional system.



Photograph No. 11 – Facing southeast at a portion of WL LTZ-005, representing a Mesic/Farmland system.



Photograph No. 12 – Facing southeast at a portion of WL LTZ-025, representing a Mesic/Farmland system.



Photograph No. 13 – Facing north at a portion of WL LTZ-104, representing a Mesic/Farmland system.



Photograph No. 14 – Facing north at a portion of WL CML-001, representing a Hillside Seep system.



Photograph No. 15 – Facing northeast at a portion of WL LTZ-085, representing a Hillside Seep system.



Photograph No. 16 – Facing southwest at a portion of WL LTZ-113, representing a Hillside Seep system.



Photograph No. 17 – Facing north at a portion of WL BPH-002, representing a Pond system.



Photograph No. 18 – Facing north at a portion of WL LTZ-008, representing a Pond system.



Photograph No. 19 – Facing southeast at a portion of WL LTZ-116, representing a Pond system.



Photograph No. 20 – Facing north at a portion of WL LTZ-137, representing a Pond system.

APPENDIX F –
LIST OF REFERENCES

REFERENCES

Centre County Open Data

- Lakes and Ponds

https://gisdatacentrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::lakes2?geometry=-77.875%2C40.756%2C-77.548%2C40.801 February 2021.

https://gisdata-centrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::ponds February 2021.

- Soils

https://gisdatacentrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::ssurgo-soils1?geometry=-80.372%2C40.607%2C-75.146%2C41.333 February 2021.

- Streams/Hydrography https://gisdata-centrecountygov.opendata.arcgis.com/datasets/CentreCountyGov: :hydrography-1 February 2021.

Data Refresh Study Documents

- *Route 322/144/45 Corridors Data Refresh Project, Centre County, Pennsylvania – 2019 Data Refresh Report* (McCormick Taylor).
- *Route 322/144/45 Corridors Data Refresh Project, Centre County, PA– Secondary Source Wetland and Stream Resource Data Collection Memo* (McCormick Taylor, June 29, 2019).
- *South Central Centre County Transportation Study (SCCCTS) - 2002 Delineation, Pre2002 Delineation, and 2004 Streams.*

Pennsylvania Code, Title 25, Chapter 93 listing of protected water uses

https://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter93/s93.9l.html&d=reduce February 2021.

Pennsylvania Department of Environmental Protection (PA DEP)

- eMapPA online application http://www.depgis.state.pa.us/emappa February 2021.
- List of existing water uses

http://files.dep.state.pa.us/Water/Drinking%20Water%20and%20Facility%20Regulation/WaterQualityPortalFiles/Existing%20Use/EU%20table%20list.pdf February 2021.

Pennsylvania Fish and Boat Commission (PFBC)

- Listing of Stocked Trout Waters, Wild Trout Waters (Natural Reproduction), and Class A Wild Trout Streams

https://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Pages/TroutWaterClassifications.aspx

February 2021.

Pennsylvania Spatial Data Access (PASDA)

- Modeled Primary Wetlands

https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=3137 February 2021.

Readily available (Internet) aerial photography

https://datacommons.maps.arcgis.com/apps/View/index.html?appid=10af5f75f9f94f01866359ba398cb6a9

February 2021.

Google Earth, February 2021.

Soil Survey Geographic Database (SSUVGO)

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627 February 2021.

U.S. Army Corps of Engineers (USACE*)*

Wetland Delineation Manual, Technical Report Y-87-1 (1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont (2012).*

U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service's (NRCS)

- Web Soil Survey; Centre County Soil Survey and the Pennsylvania County Listing of Hydric Soils https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm February 2021.

U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (https://www.fws.gov/wetlands/data/mapper.html February 2021.

U.S. Geological Survey (USGS) mapping

- Bellefonte, Centre Hall, Mingoville, Spring Mills, and State College

https://www.mytopo.com/products/quad-maps-state.cfm?state=Pennsylvania February 2021.

GIS DATA SOURCES

Layer Name	Source	Date
Hydric Soils	SSURGO web soil survey and Centre County Open Data	3/18/2020
Delineated Watercourses	S&L	2025
Delineated Wetlands	S&L	2025
NWI Wetlands	NWI	2020
Modeled Wetlands	PASDA	2020
CH93 Designated Use	PASDA/Pennsylvania Department of Environmental Protection	2019
CH93 Existing Use	PASDA/Pennsylvania Department of Environmental Protection	2019
Stocked Trout Streams	PASDA/Pennsylvania Fish and Boat Commission	2020
Natural Reproduction Wild Trout Streams	PASDA/Pennsylvania Fish and Boat Commission	2020
Class A Trout Streams	PASDA/Pennsylvania Fish and Boat Commission	2020
Major Watersheds	Centre County Open Data	3/18/2020

APPENDIX G
– RESUMES

LOGAN T. ZUGAY

Project Scientist - Natural Resources



EDUCATION

Bachelor of Science, Wildlife Biology, The Pennsylvania State University, 2011

REGISTRATIONS/ TRAININGS

Recognized Qualified Bog Turtle Surveyor

U.S. Fish and Wildlife Service (PA)/PA Fish and Boat Commission

U.S. Fish and Wildlife Service (NJ)

YEARS OF EXPERIENCE

15 Years

Mr. Zugay's project experience has focused primarily in the area of jurisdictional wetland identification and delineation, but also includes the study and evaluation of aquatic ecosystems, water quality monitoring, and threatened/endangered/rare species investigations.

PROFESSIONAL EXPERIENCE

Wetland Identification/Delineation - Mr. Zugay has completed many wetland identification/delineation, and permitting projects for transportation, mining, and energy projects in Pennsylvania, Maryland, Virginia, West Virginia, and Tennessee. He has experience in wetland function evaluation using the USACE Wetland Evaluation Technique II, Hydrogeomorphic Classification, and New England USACE Descriptive Method.

Bog Turtle Species Specialist - Mr. Zugay is on the USFWS and PFBC qualified bog turtle surveyors (QBTS) list in Pennsylvania and the USFWS QBTS list in New Jersey. The bog turtle (*Glyptemys muhlenbergii*) is a Federally-listed threatened species and a Pennsylvania State-listed endangered species. Investigations conducted include potential habitat investigations

(Phase 1 Surveys), field surveys for the species (Phase 2 Surveys), trapping surveys (Phase 3 Surveys), and radio telemetry research for the species throughout Pennsylvania. These activities include characterization of the existing vegetative community, hydrologic regime, evaluation of the soils composition, metapopulation analysis, and hydrologic connectivity assessments. He has located numerous bog turtles at various sites along with countless other herptofauna.

Biological Evaluations - Mr. Zugay has also been involved with the biological evaluations for benthic macroinvertebrates, various survey methods for T&E species of bats, ambient water quality evaluations, and physical aquatic habitat evaluations. He has also participated in surveys for Eastern box turtles (Terrapene carolina) in Maryland. Additionally, Mr. Zugay has experience in the design, restoration, and enhancement of streams using the methodologies and techniques of Applied River Morphology (fluvial geomorphology).

PROJECT EXPERIENCE

Field Crew Leader, Phase 2 and Phase 3 Bog Turtle Surveyor, and Assistant Project Coordinator, Energy Projects, Pennsylvania – Mr. Zugay has lead wetland and watercourse delineation teams, performed hundreds of Phase 1 bog turtle habitat assessments, lead and assisted on dozens of Phase 2 bog turtle surveys and several Phase 3 bog turtle trapping surveys, and performed pre-construction monitoring during the active bog turtle season across Pennsylvania (14 Counties) for various energy projects (pipeline, overhead power lines, etc.). Mr. Zugay has been overseeing the organization and operation of all field teams, coordination with land agents and project managers, daily organization and composition reports and of data, weekly mapping development, T&E habitat assessments, and more. These projects are ongoing.

Assistant, Bog Turtle Surveying and Radio Telemetry, Chester County, Pennsylvania – Mr. Zugay was part of a team that searched for bog turtles in wetlands in Chester County in order to perform a radio telemetry study. He located and positively identified multiple bog turtles, and assisted with data collection, scute notching, attachment of radio transmitters, and the weekly monitoring and GPS surveying of several turtles.

Wetland Delineator and Assistant Project Coordinator, Pipeline Anomaly Repair Project, Mercer County, Pennsylvania – Mr. Zugay delineated wetlands and watercourses over an approximately 2-mile corridor along an existing natural gas line. In addition to his field work responsibilities, Mr. Zugay also was responsible for performing the GPS survey of aquatic resources, managing the development of the E&S plan

and permit package composition, and attending a pre-application meeting on behalf of the client with the Pennsylvania Department of Environmental Protection (DEP).

Field Crew Leader and Assistant Project Coordinator, Wetland and Watercourse Delineations, West Virginia – Mr. Zugay delineated wetlands and watercourses in portions of a thirty-two mile long proposed pipeline corridor. Soils, vegetation, and hydrology were analyzed and recorded. Mr. Zugay was also responsible for the daily organization of the delineation team.

Wetland Delineator and Assistant Project Coordinator, Pipeline Replacement Project, Cameron County, Pennsylvania – Mr. Zugay delineated wetlands and watercourses over an approximately 1.5-mile corridor along an existing natural gas line proposed for replacement. In addition to his field work responsibilities, Mr. Zugay also was responsible for managing the GPS survey of aquatic resources, development of the E&S plan, permit package composition, and other management activities associated with the project.

Assistant, US 219 Bat Hibernacula Surveys, Somerset County, Pennsylvania – Mr. Zugay was a member of a field team responsible for locating potential bat hibernacula portals and trapping those locations. Bat handling, species identification, and data processing with a Qualified Indiana Bat Surveyor (QIBS) were the key components of the job.

Assistant, Water Quality Monitoring and Wetland Delineation, Tennessee – Mr. Zugay assisted with the collection of data and grab samples from surface water systems in Tennessee as part of strip mine pollution monitoring. The data included pH, dissolved oxygen, specific conductance, and flow. Benthic macroinvertebrates were also collected and analyzed in order to determine the health of the insect communities living in the streams. Wetland delineations were also performed throughout the subject property.

Assistant, West Virginia Route 10 Wetland and Watercourse Delineations, West Virginia – Mr. Zugay delineated multiple wetlands and watercourses along the two-mile study area. Soils, vegetation, and hydrology were analyzed and recorded. Additionally, high gradient streams were evaluated with the USACE data sheets for embeddedness, canopy cover, substrate size, detritus material cover, and more.

Field Crew Member for Potential Indiana Bat Hibernacula and Mist Net Survey, Mingo County, West Virginia – Mr. Zugay was part of a team that identified potential Indiana bat hibernacula and mist net survey locations. He also participated in a mist net survey.

Assistant, Eastern Box Turtle Surveyor, InterCounty Connector Highway Project, Maryland – Mr. Zugay participated in field surveys for Eastern box turtles within the project area, collecting data on the turtles, notching scutes, and relocating the turtles outside of the project impact area.

Assistant, Bat Emergence Surveys, Lackawanna County, Pennsylvania – Mr. Zugay assisted on bat emergence count surveys to monitor activity of bats in a mitigation site. Activities included the use of infrared camera equipment, Anabat audio recording devices, and various forms of data collection.

Assistant, Benthic Macroinvertebrate Sampling, Virginia – Mr. Zugay assisted with the kick sample collection of benthic macroinvertebrates on multiple streams associated with coal mine permits. Additionally, Mr. Zugay assisted with the lab work involved with these sites including sorting and identifying organisms from the samples.

Lead Biologist, Wetland and Watercourse Restoration Project, York County, Pennsylvania – Mr. Zugay was part of a project involving the restoration of wetland and watercourse habitats as a result of an unauthorized crossing. Mr. Zugay conducted a field evaluation including a Phase 1 bog turtle habitat assessment, developed a restoration plan for the contractors, helped design a typical for each crossing, coordinated with the client and DEP, and assisted in the monitoring of the restoration construction activities.

Benjamin P. Hepler

Staff Scientist – Natural Resources



EDUCATION

M.S., Biology, 2014, Shippensburg University of Pennsylvania

B.S., Biology, 2012, Messiah University

PROFESSIONAL REGISTRATIONS/TRAINING

Pennsylvania Recognized Qualified Bog Turtle Surveyor - U.S. Fish and Wildlife Service (PA Field Office)/Pennsylvania Fish and Boat Commission

MSHA Part 46 Training

YEARS OF EXPERIENCE

8

PROFESSIONAL EXPERIENCE

Mr. Hepler's project experience has focused primarily in the area of jurisdictional wetland identification and delineation but also includes the study and evaluation of aquatic ecosystems, water quality monitoring, and threatened/endangered/rare species investigations.

Wetland Identification/Delineation – Mr. Hepler has participated in and led numerous wetland identification/delineation projects for transportation, development, energy, and mining. He has experience in wetland function evaluation using the USACE Wetland Evaluation Technique II, Hydrogeomorphic Classification, and New England USACE Descriptive Method.

Bog Turtle Survey Experience – Mr. Hepler is on the USFWS and PFBC qualified bog turtle surveyors (QBTS) list in Pennsylvania. The bog turtle (*Glyptemys muhlenbergii*) is a Federally-listed threatened species and a Pennsylvania State-listed endangered species. Investigations conducted include potential habitat investigations (Phase 1 Surveys), field surveys for the species (Phase 2 Surveys), trapping surveys (Phase 3 Surveys), and radio telemetry research for the species throughout Pennsylvania. These activities include characterization of the existing vegetative community, hydrologic regime, evaluation of the soils composition, metapopulation analysis, and hydrologic connectivity assessments. He has located numerous bog turtles at various sites along with countless other herptofauna.

Biological Evaluations – Mr. Hepler has been involved with numerous biological evaluations for benthic macroinvertebrates, various survey methods for T&E species of bats, ambient water quality evaluations, and physical aquatic habitat evaluations. He has participated in road cruising surveys, opportunistic searches, and drift fencing with pitfall trap install/checking for the eastern spadefoot toad (*Scaphiopus holbrookii*) and visual surveys for the bald eagle (*Haliaeetus leucocephalus*).

PROJECT EXPERIENCE

PennDOT, Wetland and Watercourse Investigations, Pennsylvania – Assisted with and led numerous wetland and watercourse investigations throughout Pennsylvania for roadway improvement and bridge/culvert replacement projects. Activities associated with these projects include wetland and watercourse delineation, GPS survey/post processing correction and export, threatened and endangered species investigations and habitat assessments, and report preparation.

FirstEnergy, Wetland and Watercourse Investigations, Pennsylvania – Assisted with and led numerous wetland and watercourse investigations throughout Pennsylvania for right-of-way and substation improvements and expansions. Activities associated with these projects include wetland and watercourse delineation, GPS survey/post processing correction and export, threatened and endangered species investigations and habitat assessments, and report preparation.

Phase 2 Bog Turtle Surveys, Pennsylvania – Team participant and lead on Phase 2 Bog Turtle Surveys for various transportation and pipeline projects in Adams, Berks, Carbon, Cumberland, Lancaster, Lehigh, Northampton, and York Counties.

Phase 3 Bog Turtle Surveys, Pennsylvania – Team participant on Phase 3 Bog Turtle Surveys in wetlands in Berks, Northampton, and York Counties. Activities included daily trap checking and positively identifying herptofauna.

Radio Telemetry, Pennsylvania – Mr. Hepler was part of a team that performed radio telemetry studies involving bog turtles. He assisted with data collection, attachment of radio transmitters, and the routine monitoring of turtle movements and GPS surveying of their locations at sites in Lancaster and Northampton Counties.

Eastern Spadefoot Toad Surveys, Pennsylvania – Team participant on road cruising surveys, opportunistic searches, and drift fencing with pitfall trap install/checking for various land development projects in Huntingdon, Northumberland, and Northampton Counties.

South Valley Parkway, Bat Emergence Surveys, Luzerne County, Pennsylvania (2017-2021) – Assisted on bat emergence count surveys to monitor activity of bats at a mitigation site in order to determine bat occupancy in the potential habitat. Activities included the use of infrared camera equipment and Anabat audio recording devices.

Bat Hibernacula Identification Surveys, Schuylkill County, Pennsylvania – Assisted in surveys to identify bat hibernacula sites. Activities included searching for and assessing potential bat hibernacula sites in abandoned mine land.

Harp Trap Surveys, Valley View Business Park Phase II, Lackawanna County, Pennsylvania – Assisted with harp trapping surveys at potential bat hibernacula sites. Activities included hourly trap checking and recording morphometric data on captured bats.

Mist Net Surveys, Corridor H, Tucker County, West Virginia – Assisted with mist netting surveys for a highway development project. Activities included trap checking every 15 - 20 minutes and recording survey data.

Bald Eagle Surveys, Dauphin County, Pennsylvania – Mr. Hepler was responsible for monitoring bald eagle activity surrounding existing overhead power line structures. Activities included visual surveys for bald eagles and detailed recording of observed activities and conditions.

Post-construction Resource Monitoring, Southeastern Pennsylvania – Carried out biannual assessments of wetland and riverine systems, as well as riparian planting areas, for a pipeline project. Activities included documenting the condition of over 400 resources located along approximately 60 miles of restored pipeline corridor.

Bog Turtle Compliance Monitor, Lancaster County, Pennsylvania – Mr. Hepler was responsible for monitoring horizontal directional drilling (HDD) activities at a known bog turtle location for a pipeline project. Activities included daily water quality monitoring at shallow wells, inspecting the integrity of bog turtle exclusion fencing, surveying the workspace for amphibians and reptiles, providing bog turtle safety training to workers on-site, and responding to inadvertent return (IR) events.

Well Water and Surface Water Sampling and Monitoring, Pennsylvania – Mr. Hepler was responsible for the collection of surface water samples and well water samples at existing mines and at private residences adjacent to the mines. He was also responsible for collecting flow data at on-site watercourses and measuring static water level depths at the sampled wells.

Sequatchie Valley Coal Association – Assisted with and led annual aquatic assessments required as part of the NPDES discharge permit conditions for a 1,000-acre mine site in Dunlap, Tennessee. The aquatic assessment efforts included the characterization of the biological, chemical, and physical conditions of numerous streams within the Dry and He Creek Watersheds.

Environmental Compliance Monitoring, FirstEnergy, Pennsylvania and West Virginia – Mr. Hepler conducted environmental compliance monitoring for overhead power line transmission rebuild projects. Activities included overseeing construction operations to ensure daily environmental compliance. Inspections included the use of an ESRI-based monitoring system, weekly compliance reports, and coordination with construction contractors.

Cooper M. Leslie

Staff Scientist



EDUCATION

B.S., Biology and Environmental Science, 2020, William and Mary

REGISTRATIONS/ CERTIFICATIONS

TDEC QSSOP Macroinvertebrate Survey Credentials 2024

YEARS OF EXPERIENCE

4

PROFESSIONAL EXPERIENCE

Mr. Leslie's project experience has focused primarily in the area of jurisdictional wetland identification and delineation, but also includes the study and evaluation of aquatic ecosystems, water quality monitoring, and threatened/endangered/rare species investigations.

Wetland Identification/Delineation - Mr. Leslie has participated in many wetland identification / delineation projects for transportation and energy projects in Pennsylvania. He has experience in wetland identification and delineation using the USACE Wetland Evaluation Technique II, Hydrogeomorphic Classification, and New England USACE Descriptive Method. Mr. Leslie also has experience with a Trimble handheld GPS survey and mapping composition.

Bog Turtle Survey Experience - Mr. Leslie has been a part of numerous potential habitat evaluations and field surveys for the bog turtle (*Glyptemys muhlenbergii*), a Federally listed threatened species and State listed endangered species. Investigations conducted include assisting with potential habitat investigations (Phase 1 Surveys), field surveys for the species (Phase 2 Surveys), trapping surveys (Phase 3 Surveys), and radio telemetry research for the species in Pennsylvania. This includes characterization of the existing vegetative community, hydrologic regime, evaluation of the soils composition, metapopulation analysis, and hydrologic connectivity assessments.

PROJECT EXPERIENCE

PennDOT, Wetland and Watercourse Investigations, Pennsylvania – Mr. Leslie assisted with numerous wetland and watercourse investigations throughout Pennsylvania for roadway improvement and bridge/culvert replacement projects. Activities associated with these projects include wetland and watercourse delineation, GPS survey, threatened and endangered species investigations and habitat assessments, and report preparation.

Overhead Powerlines, Wetland and Watercourse Investigations, Pennsylvania – Mr. Leslie assisted with numerous wetland and watercourse investigations throughout Pennsylvania for right-of-way and substation improvements/expansions. Activities associated with these projects include wetland and watercourse delineation, GPS survey, threatened and endangered species investigations and habitat assessments, environmental compliance monitoring, and report preparation.

Assistant, Phase 2 and Phase 3 Bog Turtle Surveys, Natural Gas Pipeline Project, Northampton County, Pennsylvania – Team participant on Phase 2 and Phase 3 Bog Turtle Surveys in wetlands for a pipeline project in Northampton County, Pennsylvania. Activities included daily trap checking, and positively identifying herptofauna.

Assistant, Environmental Compliance Monitoring, FirstEnergy, Dauphin County, Pennsylvania – Mr. Leslie conducted environmental compliance monitoring on an overhead powerline transmission rebuild project. Activities included overseeing construction operations to ensure daily environmental compliance. Inspections included the use of an ESRI-based monitoring system, weekly compliance reports, and coordination with construction contractors.

Assistant, Phase 2 Spadefoot Toad Surveyor, Pennsylvania – Team participant on Phase 2 presence or absence surveys for eastern spadefoot toad (*Scaphiopus holbrookii*), a Pennsylvania listed endangered species.

Assistant, Radio Telemetry, Pennsylvania – Mr. Leslie was part of a team that performed radio telemetry studies involving bog turtles. He assisted with data collection, attachment of radio transmitters, and the routine monitoring of turtle movements and GPS surveying of their locations at sites Northampton County.

Northeastern Pennsylvania – Carried out biannual assessments of wetland and riverine systems, as well as riparian planting areas, for a pipeline project. Activities included documenting the condition of over 400 resources located along approximately 60 miles of restored pipeline corridor.

Sequatchie Valley Coal Association – Assisted with annual aquatic assessments required as part of the NPDES discharge permit conditions for a 1,000-acre mine site in Dunlap, Tennessee. The aquatic assessment efforts included the characterization of the biological, chemical, and physical conditions of numerous streams within the Dry and He Creek Watersheds.