

**WETLAND IDENTIFICATION AND
DELINEATION REPORT**

LANCASTER COUNTY
S.R. 1011, Section 002 BRIDGE REPLACEMENT

Earl Township
Lancaster County, Pennsylvania

Prepared for:

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SUMMARY

This document reports the wetland delineation completed for the replacement of the bridge carrying S.R. 1011 Section 002 over unnamed tributary to Mill Creek, Lancaster County, Pennsylvania. The entire study area was field checked for wetlands on May 5th and May 15th, 2002. As a result of this investigation, approximately .04 acres of palustrine wetland were delineated. In addition, one stream was designated as waters of the United States.

The wetland delineation was completed using the multi-parameter approach outlined in the U.S. Army Corps of Engineers (COE) Wetland Delineation Manual (Y-87-1). The 1987 COE methodology requires the identification of three wetland indicators: hydric soils, hydrophytic vegetation, and wetland hydrology. This report is based upon wetland boundaries, which have been surveyed.

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I. INTRODUCTION

A. Project Location and Description

The project study area is located just outside the borough of New Holland in Lancaster County, Pennsylvania (Figure 1). The project study area consists of S.R. 1011 Section 002 and bridge over an unnamed tributary to Mill Creek and begins about 250 feet to the north along the approach roadway, then extends across the existing bridge and continues south for another 250 feet. The surrounding topography consists of relatively flat agricultural lands. Land use within and directly adjacent to the project study area is agricultural in nature, specifically pasture, crop, and farm homesteads.

B. Description of the Project Study Area

The project study area specifically investigated in this document for the presence of wetlands included approximately 250 feet along both approaches within existing right-of-way and 50 feet up and down stream in the immediate vicinity of the bridge. (Figure 2). The existing structure along S.R. 1011 is a concrete encased steel I-beam. The project study area is characterized in the southwest quadrant by crop farm fields and an old homestead and its associated lawn/meadow in the southeast quadrant. At the bridge the unnamed tributary to Mill Creek flows east to west as the roadway runs north to south. Just beyond the bridge in the northwest quadrant dairy cows currently graze in a pasture. The northeast quadrant contains a farmstead which occupies a farm house, barn, large chicken coop, and garden. All areas investigated for wetlands are shown in the Wetland Delineation Boundary Map in Appendix D.

The purpose of the evaluation was to identify, if present, areas within the jurisdiction of the U.S. Army Corps of Engineers (COE) as waters of the United States including existing and functional wetlands. The jurisdictional wetland areas were delineated in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual*. The wetland delineation described herein consisted of the review of applicable literature and the field delineation of existing and functional wetland areas within the above reference project study area.

II. APPROACH TO THE INVESTIGATION

This report was prepared to satisfy the requirements of the COE, which has jurisdictional authority over “waters of the United States”, including wetlands, under the purview of Section 404 of the Clean Water Act; and the PA Chapter 105 Dam Safety and Waterway Management Act.

The wetland investigation was conducted in accordance with the multi-parameter approach outlined in the *COE Wetland Delineation Manual (Y-87-1)*.

Three mandatory criteria are required by the COE method for an area to be classified as a jurisdictional wetland: the dominance of hydrophytic vegetation, the presence of hydric soils, and evidence of wetland hydrology. The Routine On-site Determination Plant

Community Assessment Procedure was conducted, which requires the identification of representative plant community types in the area, and the characterization of vegetation, soils, and hydrology for each plant community type. The wetland boundary is delineated after identifying wetland and non-wetland plant communities and observing the three mandatory criteria for soils, vegetation and hydrology.

An initial desk review was conducted, which consisted of reviews of existing literature and mapping, including: the U.S. Geological Survey 7.5 minute New Holland, Pennsylvania quadrangle (Figure 2); the Soil Survey of Lancaster County, Pennsylvania (USDA-NRCS, 1985, Figure 3); and the National Wetlands Inventory (NWI) mapping for the New Holland, PA quadrangle (Figure 4). These sources were reviewed to determine potential wetland areas and to locate previously identified wetlands within the project study area.

The entire project area was reviewed for identification of topographically low areas, hydric soils, and areas with poorly drained soils. The criteria used to delineate wetlands in these areas were hydrology, soils, and vegetation, as described in the 1987 COE methodology.

Field investigations were conducted on May 5th and 15th, 2002. Observations were made as necessary to ensure adequate coverage and characterization of the project area. Data collection points were chosen for detailed description of the site's vegetation, soil, and hydrologic regime. Observations were recorded on determination data sheets at representative points located both in and out of wetland areas. The completed data sheets are included in Appendix B. Wetland boundaries were flagged in the field, and surveyed as depicted in the Wetland Delineation Boundary Mapping in Appendix D.

A. Soils

Soil test pits were dug with a spade and Dutch auger to determine if hydric soil characteristics were present. The soil test pit locations are represented as 1 through 6, taken in representative wetland and upland locations. The soil test pits were dug to a depth of 18.0 inches, conditions permitting.

Color of the soil matrix and mottling were described using the Munsell Soil Color Charts (GretagMacbeth, 2000).

Soils located within the project study area were identified from the *Soil Survey of Lancaster County, Pennsylvania*, USDA-NRCS, 1985, Figure 3). (See NRCS Soil Survey Descriptions in Appendix C) Soils identified in the project study area are included in Table 1 as follows.

TABLE 1. SOILS MAPPED IN THE PROJECT STUDY AREA.

Soil Series	Mapping Unit	Soil Phase
Lindside silt loam	Ln **	
Duffield silt loam	DbA	0 to 3 percent slopes
Clarksburg silt loam	CkA **	0 to 5 percent slopes

* Indicates soils listed as hydric in the Lancaster County Hydric Soils List (USDA-NRCS), 1985.

** Indicates soils listed as having hydric inclusions in the Lancaster County Hydric Soils List (USDA-NRCS), 1985

Source: USDA-NRCS: *Soil survey of Lancaster County, Pennsylvania, 1985.*

Lindside silt loam and Clarksburg silt loam are listed as having hydric inclusions in the Lancaster County Hydric Soils List (USDA-NRCS, 1985).

B. Vegetation

In accordance with the Plant Community Assessment Procedure, the entire project study area was investigated to identify the plant communities present. Vascular plant species were identified using the appropriate regional botanical works. Visual estimates of species abundance were made at each sample point and the dominant species determined.

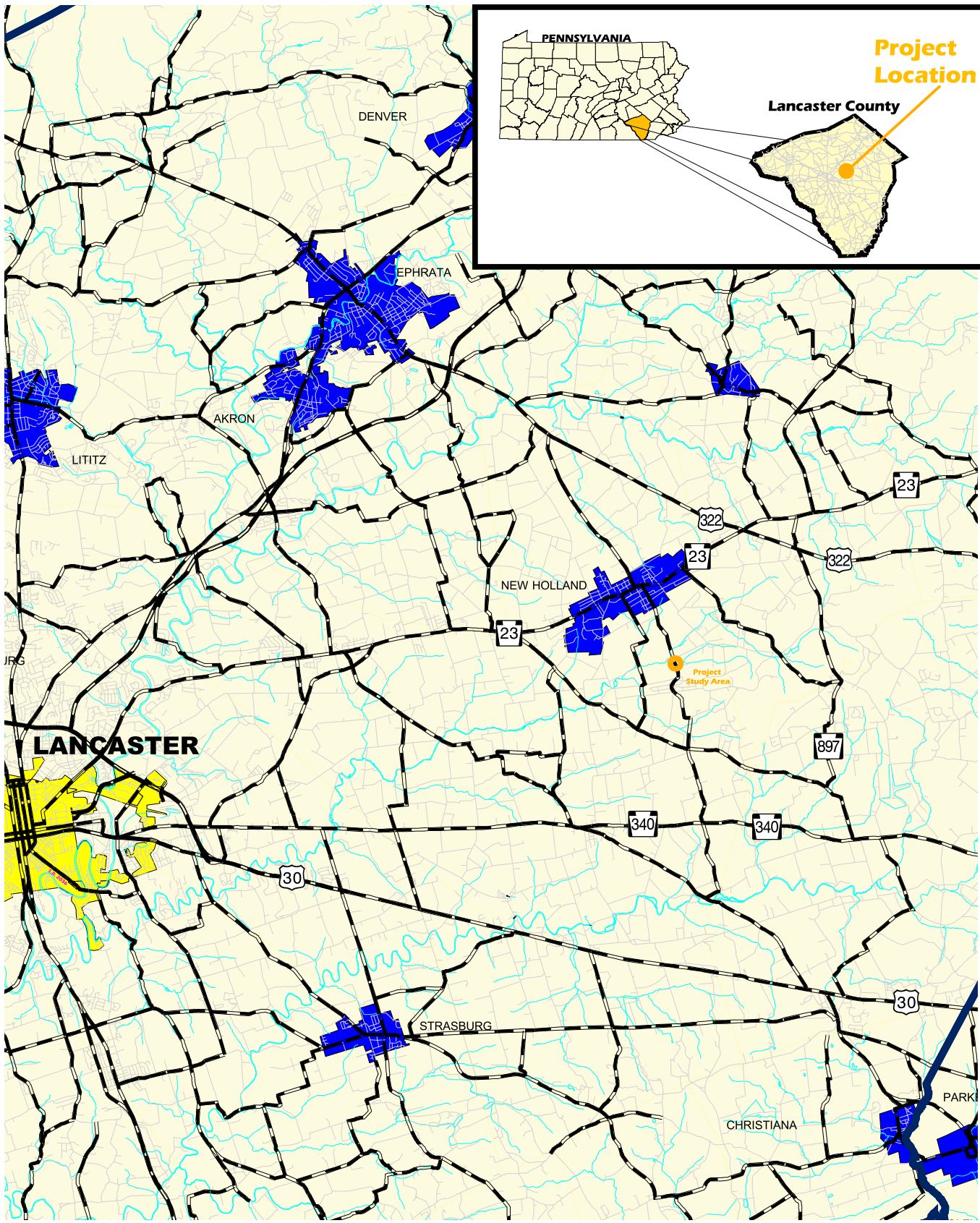
Species indicator status are according to the *National List of Plants that Occur in Wetlands: Pennsylvania* (Reed, 1988). Hydrophytic vegetation is defined as a plant community with over 50 percent of the dominant plant species ranked as obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC). Non-hydrophytic vegetation is defined as a plant community with over 50 percent of the dominant plant species ranked as facultative upland (FACU) or upland (NL-UPL). If a plant species is not listed (NL), it is assumed to be an upland species. Species of uncertain indicator value are ranked as either no agreement (NA) or as no indicator assigned (NI). Positive (+) or negative (-) modifiers indicate a greater or lesser occurrence in either wetland or upland conditions from the major ranking classification.

C. Hydrology

The hydrology of the project study area was determined in the field on May 5th and 15th, 2002. Hydrologic observations included the presence or absence of primary and secondary hydrologic indicators as identified in the 1987 COE methodology. Primary indicators included inundation, saturation of soils in the upper 12.0 inches, watermarks, drift lines, sediment deposits, and drainage patterns. Secondary hydrologic indicators, of which two or more are required in order to make a positive wetland determination, include oxidized root channels in the upper 12.0 inches, water stained leaves, and others.

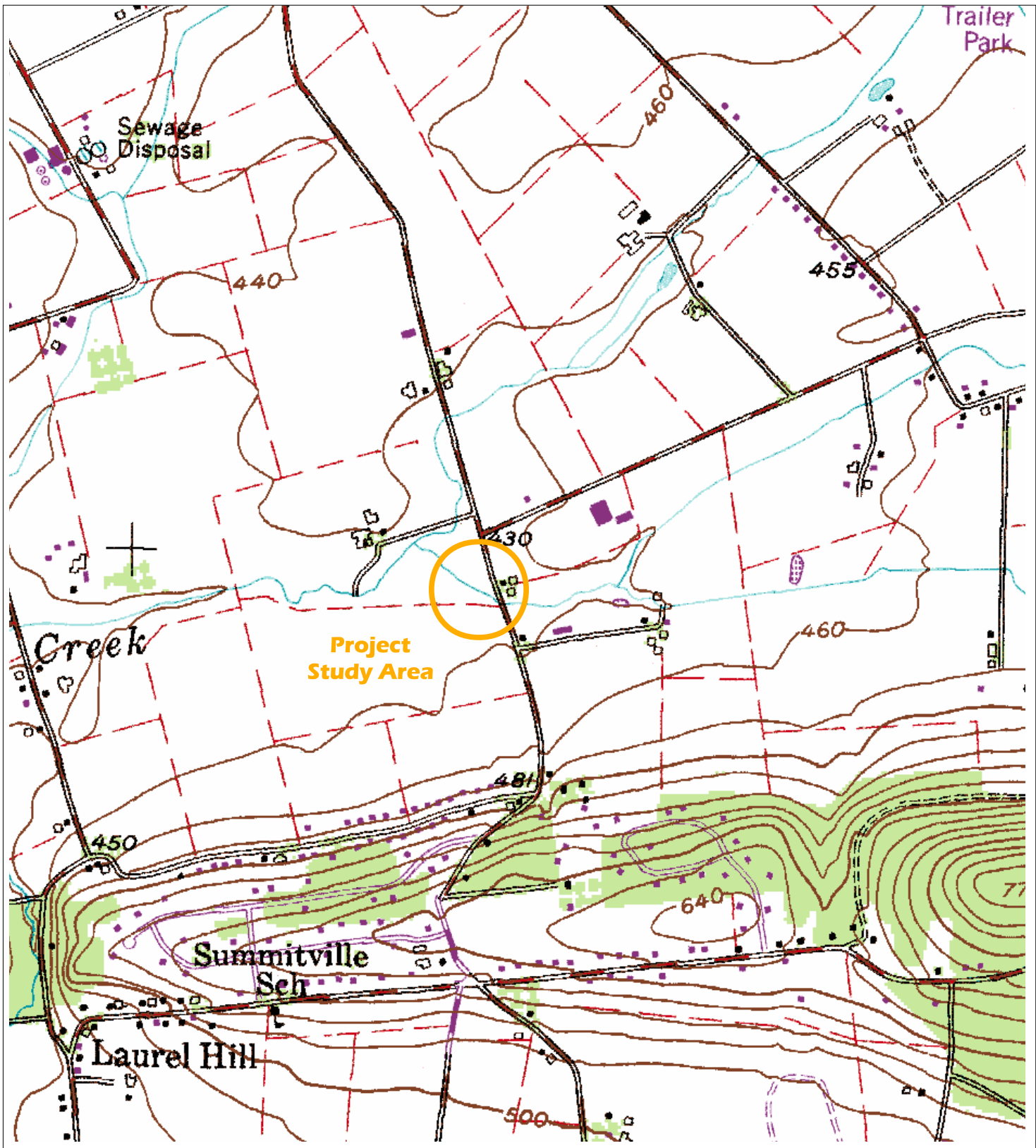
Weather conditions at the time of the field view consisted of moist, mild conditions. Inconsistent rainfall through the Spring and Summer of 2001 has created drought conditions with a lower ground water table than normal through out the region.

A field survey was conducted by Orth-Rodgers and Associates, Inc. in May 2002. Wetland limits, data point locations, and photograph location are shown on the Wetland Delineation Boundary Mapping in Appendix D.



Regional Location Map
 S.R. 1011, Section 002
 Lancaster County
 Map Scale 1" = 2.6 Miles

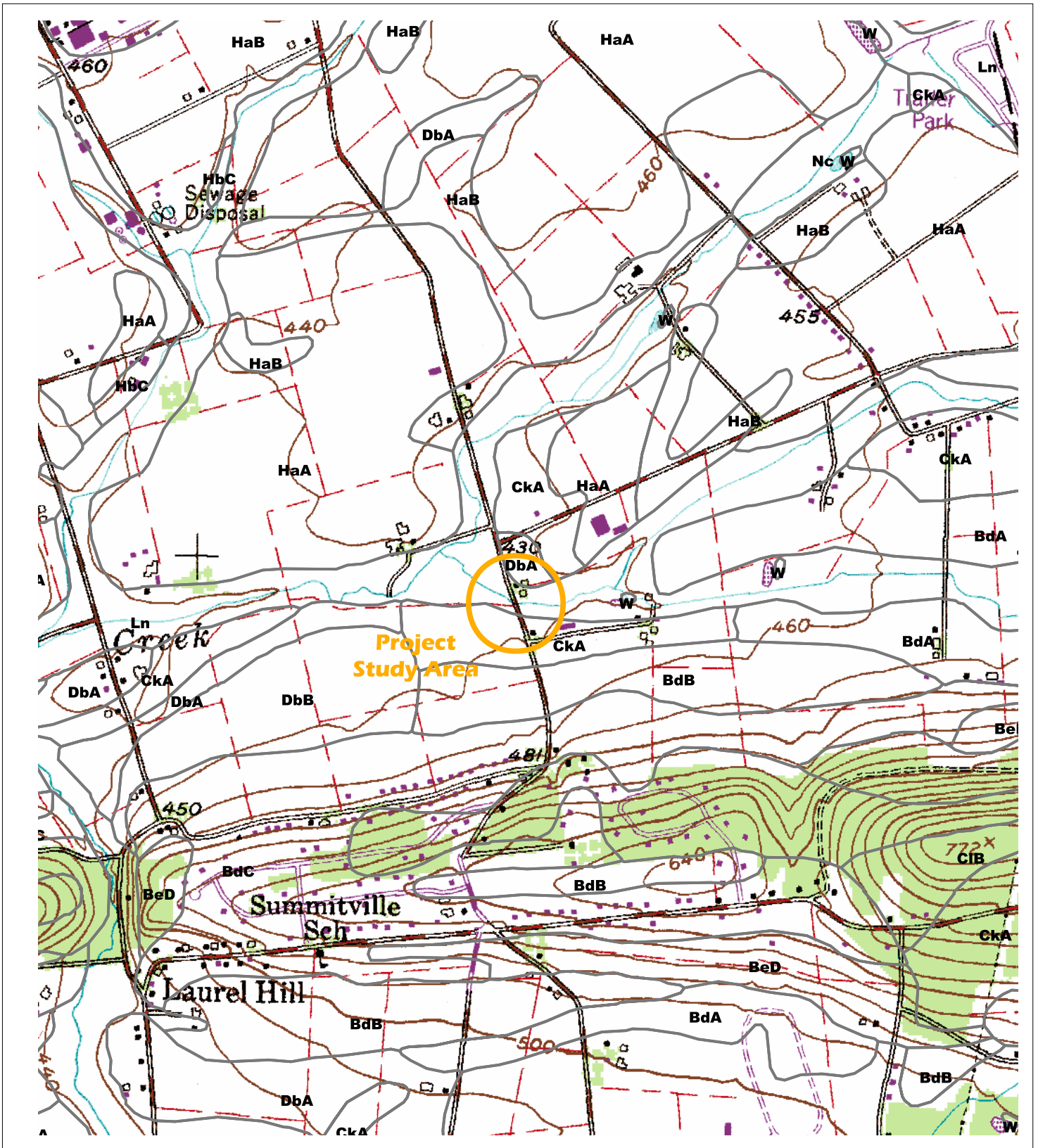
Figure 1
 Sources: Pennsylvania Department
 of Transportation, Bureau
 of Planning and Research
 State Maintained Roadways
 and Boundary Files.
 ERRI Stream Networks



USGS NEW HOLLAND PA
 S.R. 1011, Sec 002
 Lancaster County, PA

Figure 2





SOILS MAP

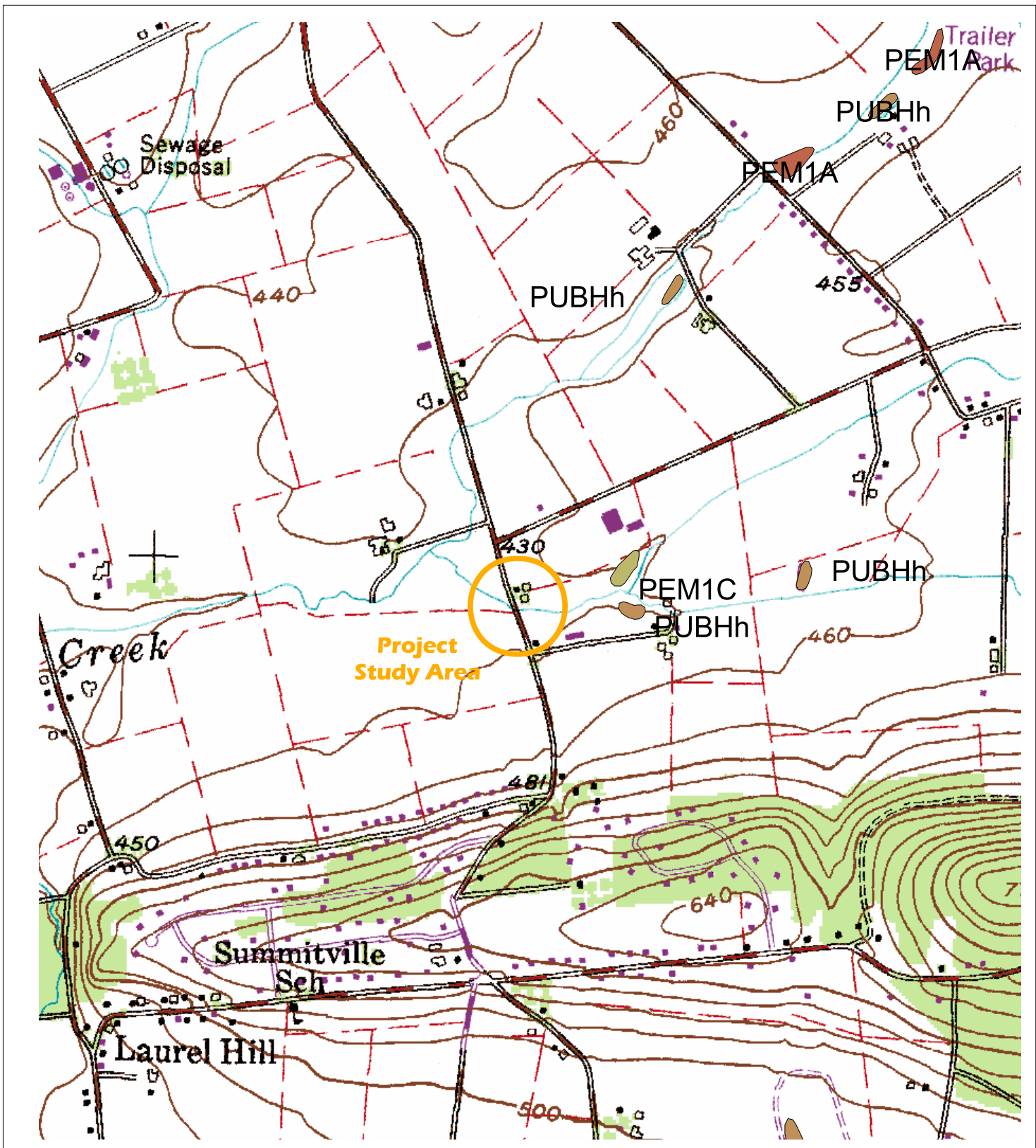
S.R. 1011, Sec 002
Lancaster County, PA

Display Scale 1" : 1,000'

Figure 3

Sources USGS 7.5 MINUTE (Topographic)
New Holland, PA. Quadrangle 1:24,000
Digital Soil Survey (SSURGO)
Lancaster County





NATIONAL WETLANDS INVENTORY MAP

S.R. 1011, Sec 002
Lancaster County, PA

Figure 4

Sources: USGS 7.5 MINUTE (Topographic)
New Holland, PA. Quadrangle 1:24,000
Digital National Wetlands Inventory

Display Scale 1" = 1,000'

III. INVESTIGATION RESULTS

The NWI mapping for the New Holland, Pennsylvania quadrangle identified no wetlands located within, or directly adjacent to the project study area. The closest wetlands identified was a Palustrine Emergent Persistent Seasonally Flooded (PEM1C) and a Palustrine Unconsolidated Bottom, Permanently Flooded, Diked/Impounded PUBHh located about 900 feet upstream and to the east of the project. NWI mapping for the project is provided in Figure 4.

The unnamed tributary, classified as Riverine, lower perennial, unconsolidated bottom, mud (R2UB3) Deep Water Habitat extends from the eastern portion of the study area west, and then bears northwest when out of the study area. This stream was identified as a water of the United States during the field view and surveyed accordingly. The unnamed tributary to Mill Creek is Chapter 93 designated as a Warm Water Fishery (WWF).

The fieldwork performed in May 2002 produced two (2) delineated lines consisting of two (2) wetlands and one (1) water of the United States. The identified wetlands are both classified as palustrine emergent, persistent (PEM1) by their dominant plant communities, according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al., 1979)

The jurisdictional wetlands delineated within the project study area include the following:

1. Unnamed Tributary to Mill Creek and associated wetlands - waters of the United States were identified as top of bank though the study area.
2. Wetland 1 – Consisted of a PEM1 wetland from Line W1-1 to W1-4.
3. Wetland 2 – Consisted of a PEM1 wetland from Line W2-1 to W2-3.

Also observed south of the bridge, but within the project area was a corrugated metal pipe (CMP) used for roadside drainage. The area surrounding and leading up to the pipe was not considered jurisdictional under Section 404 of the Clean Water Act.

A. Wetland Plant Communities

Wetland communities identified in the project study area are described using the following parameters: vegetative composition, soil series as indicated by the soil survey, soil characteristics as determined in the field, and general indications of the presence or absence of wetland hydrology. Detailed determination data sheets of the observation points are found in Appendix B. Locations of all plant communities are located in the Wetland Delineation Boundary Mapping located in Appendix D.

Plant Community 1. Palustrine Emergent, Persistent (PEM1)

This wetland community comprised .04 acres within the project study area. This wetland plant community dominated both wetlands in the project study area. The PEM plant community consisted of the following plant species:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Indicator Status</u>
Sweet flag	<i>Acorus calamus</i>	OBL
Jewelweed	<i>Impatiens capensis</i>	FACW
Reed Canary Grass	<i>Phalaris arundinacea</i>	FACW+
Kentucky Blue Grass	<i>Poa pratensis</i>	FACU
Climbing Nightshade	<i>Solanum dulcamara</i>	FAC-

Both wetlands (Wetland 1 & 2) were identified in the project study area with dominant PEM1 vegetation (See Wetland Delineation Boundary Mapping in Appendix D). Soils collected in these wetland areas resembled the technical descriptions of the soil typed mapped on-site. Most soils mapped in the PEM1 wetlands consisted of Lindside silt loam (Ln), with soil matrices ranging from dark grayish brown (10YR 4/2) to light brownish gray (10YR 6/2) with light brownish gray 10YR 6/2, yellowish brown 10YR5/6, and brown 10YR5/3 mottles.

Wetland hydrology was present in the PEM1 wetlands in the form of primary hydrologic indicators consisting of saturation within 12.0 inches of the soil surface, and secondary hydrologic indicators consisting of oxidized root channels within 12.0 inches of soil surface. Both PEM1 wetlands were hydrologically connected to the unnamed tributary to Mill Creek. Photographs 1-5 depict typical conditions associated with these wetlands and are located in Appendix A.

Detailed determination data sheets of the observation points are found in Appendix B. Locations of all plants communities are located in the Wetland Delineation Boundary Mapping located in Appendix D.

B. Upland Plant Communities

Upland communities identified in the project study area are described using the following parameters (except where otherwise noted): vegetative composition, soil series as indicated by the soil survey, soil characteristics as determined in the field, and general indications of the presence or absence of wetland hydrology.

Detailed determination data sheets of the observation points are found in Appendix B. Locations of all plant communities are located in the Wetland Delineation Boundary Mapping located in Appendix D.

Plant Community 2. Meadow

This upland plant community is characterized by lawn grasses and forbes consisting of the following dominant species.

<i>Common Name</i>	<i>Scientific Name</i>	<i>Indicator Status</i>
Silver Maple	Acer saccharinum	FACW
Garlic Mustard	Ailaria officinale	NL-UPL
Smooth Brome	Bromus inermis	NL-UPL
Field Thistle	Cirsium discolor	NL-UPL
Orchard Grass	Dactylis glomerata	FACU
Tall Fescue	Festuca arundinacea	FACU
Velvet Grass	Holcus lanatus	FACU
Kentucky Blue Grass	Poa pratensis	FACU
Bulbous Buttercup	Ranunculus bulbosus	NL-UPL
Common Dandelion	Taraxacum officinale	FACU-

Soils collected in data plots located within this plant community type resembled the technical descriptions of the soil types mapped on-site, which consisted of the nearly level, deep, and moderately well drained Lindside silt loam (Ln).

Soils taken within this plant community type consisted of moderately dark matrix chromas through the profile. The matrix chromas ranged from 10 YR 4/2 to 10 YR 4/3 with common to many distinct 10 YR 5/6 and 10 YR 5/1 mottles. Depth of profiles ranged from 12.0 to 18.0 inches. No primary or secondary hydrologic indicators were recorded for this plant community type.

Plant Community 3. Riparian Pasture

This upland plant community is characterized by predominantly upland vegetation consisting of the following dominant plant species:

<i>Common Name</i>	<i>Scientific Name</i>	<i>Indicator Status</i>
Sweet Vernal Grass	Anthoxanthum odoratum	FACU
Daisy Fleabane	Erigeron annuus	FACU
Tall Fescue	Festuca arundinacea	FACU
English Plantain	Plantago lanceolata	NL-UPL
Kentucky Blue Grass	Poa pratensis	FACU
Bulbous Buttercup	Ranunculus bulbosus	NL-UPL

Soils collected in data plots located within this plant community type typically resembled the technical descriptions of the soil types mapped on-site, which consisted of well-drained Lindside silt loam (Ln).

Soils taken within this plant community type consisted of bright matrix chromas through the profile. The matrix chromas ranged from 10 YR 6/3 and 10 YR 6/2 to a more gray 2.5 Y 5/2. Associated mottles ranged from a very pale brown 10 YR 7/4 to slightly darker yellowish browns and grayish browns: 10 YR 6/4, 10 YR 6/6, 10 YR 5/2, and 10 YR 5/6. Depth profiles ranged from 10.0 to 18.0 inches. Some hydric soils were observed within the plant community. However, no primary or secondary hydrologic indicators were recorded for this plant community type.

IV. CONCLUSION

The wetlands delineated along the study area corridor were flagged in May 2002. Two delineated lines consisting of two (2) wetlands were used to demarcate the delineated wetland boundaries. The identified wetlands are classified as palustrine emergent, persistent (PEM1) by their dominant plant communities, according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al., 1979).

As a result of this investigation, a total of approximately .04 acres of palustrine wetland and one stream were designated as waters of the United States within the project study area.

This report was prepared to document the delineation of wetlands and natural condition within the identified project study area, and is suitable for submission to the COE and PADEP for the purposes of obtaining a jurisdictional determination and/or permit.

REFERENCES

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LIST OF PREPARERS

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Professional Experience:	3 years
Role:	Wetland Delineation; Report Production

APPENDIX A: Site Photographs



Photograph 1: View to the southwest looking at Wetland 1 from the northeast quadrant.
5/5/02.



Photograph 2: View to the south looking at Wetland 1 from the northeast quadrant.
5/5/02.



Photograph 3: View to the east looking at Wetland 2 from the northwest quadrant.
5/5/02.



Photograph 4: View to southeast looking at Wetland 2 and edge of bank from the
northwest quadrant. 5/5/02



Photograph 5: View to west looking at Wetland 2 in grazed pasture from bridge. 5/5/02

APPENDIX B: Data Forms

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R. 1011</u> Applicant/Owner: <u>Penn Dot District 8-0</u> Investigator: <u>RMF + MB</u>	Date: <u>5/6/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Wetland 1</u> PEM Transect ID: _____ Plot ID: <u>1</u>

VEGETATION

Jewelweed
 Reed canary grass
 Climbing nightshade

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>herb</u>	<u>Fac W</u>	9. _____	_____	_____
2. <u>Phalaris arundinacea</u>	<u>herb</u>	<u>Fac W+</u>	10. _____	_____	_____
3. <u>Solanum dulcamara</u>	<u>herb</u>	<u>fac -</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 66.6%

Remarks: Hydrophytic vegetation present - Greater than 50% of the dominant plants are OBL, Fac w, and/or FAC

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil-Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>12</u> (in.)	Remarks: <u>Hydrology present - secondary hydrologic indicators present</u>

SOILS

Map Unit Name (Series and Phase): <u>(Ln) Linside silt loam</u>		Drainage Class: <u>Moderately well drained</u>			
Taxonomy (Subgroup): <u>Fluvaquentic Eutrochrepts</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		10YR 4/2	10YR 6/2	few / faint	silt loam
			10YR 5/6	few / distinct	mg concretions
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)		
Remarks: Ln soils have hydric inclusions on local hydric soils list					
7" - mottles begin Matrix chroma of 2 with mottles					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <p style="font-size: 1.2em;">All three wetland parameters present</p>	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R. 1011</u> Applicant/Owner: <u>PennDOT District 8-0</u> Investigator: <u>RMF + MB</u>	Date: <u>5/6/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Upland/meadow</u> Transect ID: <u> </u> Plot ID: <u> 2 </u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Taraxacum officinale</u>	<u>herb</u>	<u>Fac U</u>	5. _____	_____	_____
2. <u>Ranunculus bulbosus</u>	<u>herb</u>	<u>NL-UPL</u>	10. _____	_____	_____
3. <u>Poa pratensis</u>	<u>herb</u>	<u>Fac U</u>	11. _____	_____	_____
4. <u>Bromus inermis</u>	<u>herb</u>	<u>UPL</u>	12. _____	_____	_____
5. <u>Dactylis glomerata</u>	<u>herb</u>	<u>Fac U</u>	13. _____	_____	_____
6. <u>Acer saccharinum</u>	<u>tree</u>	<u>Fac W</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 1/6 = 16.6%

Remarks: Greater than 50% of the dominant plants are OBL, FACW and/or FAC.

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: _____ (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="margin-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="margin-left: 20px;"><input type="checkbox"/> Saturated in Upper 12 Inches</p> <p style="margin-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="margin-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="margin-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="margin-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p style="margin-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="margin-left: 20px;"><input type="checkbox"/> Local Soil-Survey Data</p> <p style="margin-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
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Remarks: No hydrology indicators present

SOILS

Map Unit Name (Series and Phase): (Ln) Lindside silt loam Drainage Class: Moderately well
 Field Observations
 Taxonomy (Subgroup): Fluvaquentic Eutrochrepts Confirm Mapped Type? Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-2</u>					<u>organic debris</u>
<u>2-12</u>		<u>10YR 4/3</u>			<u>Silty loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Ln soils have hydric inclusions on local hydric soils list
Matrix Chroma 3

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? Yes <input checked="" type="radio"/> No (Circle)
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No (Circle)	
Hydric Soils Present? Yes <input checked="" type="radio"/> No (Circle)	

Remarks: No wetland technical parameters present

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R. 1011</u> Applicant/Owner: <u>Penn DOT District 8-0</u> Investigator: <u>Rmf + MB</u>	Date: <u>5/6/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Upland/ Meadow</u> Transect ID: <u> </u> Plot ID: <u> 3 </u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Poa pratensis</u>	<u>herb</u>	<u>FAC U</u>	5. _____	_____	_____
2. <u>Taraxacum officinale</u>	<u>herb</u>	<u>FAC U</u>	10. _____	_____	_____
3. <u>Dactylis glomerata</u>	<u>herb</u>	<u>FAC U</u>	11. _____	_____	_____
4. <u>Ailaria officinale</u>	<u>herb</u>	<u>NL-UPL</u>	12. _____	_____	_____
5. <u>Cirsium discolor</u>	<u>herb</u>	<u>NL-UPL</u>	13. _____	_____	_____
6. <u>Festuca arundinacea</u>	<u>herb</u>	<u>FAC U</u>	14. _____	_____	_____
7. <u>Holcus lanatus</u>	<u>herb</u>	<u>FAC U</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: No hydrophytic vegetation - Less than 50% of the dominant plant species are OBL, FACW and/or FAC

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil-Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks: <u>No hydrology indicators present</u>	

SOILS

Map Unit Name (Series and Phase): <u>(Ln) / inside silt loam</u>		Drainage Class: <u>moderately well</u>			
Taxonomy (Subgroup): <u>Fluvaquentic Eutrochrepts</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5</u>		<u>10YR 4/2</u>	<u>10YR 5/6</u>	<u>common / distinct</u>	<u>silty loam</u>
			<u>10YR 5/1</u>	<u>many / distinct</u>	
<u>5-18</u>		<u>10YR 4/2</u>	<u>10YR 5/1</u>		

Hydric Soil Indicators:	
<input type="checkbox"/> Histic <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks: Ln soils have hydric inclusions on local hydric soils list
Matrix Chroma 2 with mottles

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input type="radio"/> <input checked="" type="radio"/> No (Circle) Wetland Hydrology Present? Yes <input type="radio"/> <input checked="" type="radio"/> No (Circle) Hydric Soils Present? Yes <input checked="" type="radio"/> <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> <input checked="" type="radio"/> No (Circle)
Remarks: <u>Pit taken close to bank with hydric soils, however hydrology is insufficient to support hydrophytic plant community</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R 1011</u> Applicant/Owner: <u>Penn DOT District 8-D</u> Investigator: <u>RMF + MD</u>	Date: <u>5/15/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.) <u>grazed pasture</u>	Community ID: <u>Wetland 2</u> PEM Transect ID: <u> </u> Plot ID: <u>4</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acorus calamus</u>	<u>herb</u>	<u>OBL</u>	5. _____	_____	_____
2. <u>Phalaris arundinacea</u>	<u>herb</u>	<u>FAC W+</u>	10. _____	_____	_____
3. <u>Poa pratensis</u>	<u>herb</u>	<u>FAC U</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 66.6%

Remarks: Hydrophytic vegetation present - Greater than 50% of the dominant plant species are OBL, FACW and/or FAC

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil-Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>7</u> (in.)	Remarks: <u>Hydrology present - primary and secondary water in pit hydrologic indicators present</u> <u>muskrat holes along bank</u>

SOILS

Map Unit Name (Series and Phase):		<u>(Ln) Lindside silt loam</u>		Drainage Class:	<u>moderately well</u>
Taxonomy (Subgroup):		<u>Fluvaquentic Entrochrepts</u>		Field Observations Confirm Mapped Type?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-10</u>		<u>10YR 5/2</u>	<u>10YR 5/3</u>	<u>few/distinct</u>	<u>Silt loam</u>
<u>10-18</u>		<u>10YR 6/2</u>			<u>Sandy loam</u>
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input checked="" type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Ln soils have hydric inclusions on local hydric soils list</u> <u>Iron Concretions Matrix Chroma 2 with mottles</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: <u>All three wetland parameters present</u>		

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R. 1011</u> Applicant/Owner: <u>Penn DOT District 8-0</u> Investigator: <u>RMF MB</u>	Date: <u>5/15/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>grazed pasture</u>	Community ID: <u>Upland/pasture</u> Transect ID: <u> </u> Plot ID: <u>5</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Plantago lanceolata</u>	<u>herb</u>	<u>UPL</u>	9. _____	_____	_____
2. <u>Poa pratensis</u>	<u>herb</u>	<u>FAC U</u>	10. _____	_____	_____
3. <u>Festuca arundinacea</u>	<u>herb</u>	<u>FAC U</u>	11. _____	_____	_____
4. <u>Erigeron annuus</u>	<u>herb</u>	<u>FAC U</u>	12. _____	_____	_____
5. <u>Ranunculus bulbosus</u>	<u>herb</u>	<u>UPL-UPL</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: No hydrophytic vegetation present - less than 50% of the dominant plant species are OBL, FACW and/or FAC

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil-Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks: <u>No hydrology indicators present</u>	

SOILS

Map Unit Name (Series and Phase): (Ln) Lindside silt loam Drainage Class: moderately well
 Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Fluvaquentic Eutrochrepts

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7		10YR 6/3	10YR 6/4	few/distinct	silt loam
			10YR 6/6	few/faint	
			10YR 5/2	few/distinct	
7-18		10YR 6/2	10YR 6/6	common/distinct	✓
			10YR 6/4		
			10YR 5/6		

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Ln soils have hydric inclusions on local hydric soils list
Matrix chroma of 3 with mottles

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	
Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Circle)	

Remarks:
Pit taken in floodplain with hydric soils, however hydrology is insufficient to support hydrophytic plant community

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>S.R. 1011</u> Applicant/Owner: <u>Penn Dot District 8-0</u> Investigator: <u>RMF, MB</u>	Date: <u>5/15/02</u> County: <u>Lancaster</u> State: <u>PA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>grazed pasture</u>	Community ID: <u>Upland/pasture</u> Transect ID: <u> </u> Plot ID: <u>6</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Ranunculus bulbosus</u>	<u>herb</u>	<u>NL-UPL</u>	5. _____	_____	_____
2. <u>Plantago lanceolata</u>	<u>herb</u>	<u>NL-UPL</u>	10. _____	_____	_____
3. <u>Erigeron acundinacea</u>	<u>herb</u>	<u>FAC U</u>	11. _____	_____	_____
4. <u>Anthoxanthum odoratum</u>	<u>herb</u>	<u>FAC U</u>	12. _____	_____	_____
5. _____	<u>herb</u>	<u>FAC U</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: No hydrophytic vegetation - Less than 50% of the dominant plant ~~species~~ species are OBL, FACW and/or FAC

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks):</p> <p>___ Stream, Lake, or Tide Gauge</p> <p>___ Aerial Photographs</p> <p>___ Other</p> <p>___ No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>20</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>___ Inundated</p> <p>___ Saturated in Upper 12 Inches</p> <p>___ Water Marks</p> <p>___ Drift Lines</p> <p>___ Sediment Deposits</p> <p>___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>___ Oxidized Root Channels in Upper 12 Inches</p> <p>___ Water-Stained Leaves</p> <p>___ Local Soil Survey Data</p> <p>___ FAC-Neutral Test</p> <p>___ Other (Explain in Remarks)</p>
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Remarks: No hydrology indicators present

APPENDIX C: Soil Survey Descriptions

Lindside Series

The soils of the Lindside series are fine-silty, mixed, mesic Fluvaquentic Eutrochrepts. They are deep and moderately well drained and are on flood plains. They formed in alluvium from residuum weathered from limestone. Slopes range from 0 to 3 percent.

Lindside soils are on the landscape with Nolin, Linden, and Newark soils. The Nolin and Linden soils are well drained, and the Newark soils are somewhat poorly drained.

Typical pedon of Lindside silt loam, in a pasture in Manheim Township, 0.2 mile south of Hunsecker and 0.3 mile north on Mondale Road from its intersection with State Route 23, on east side of road:

Ap – 0 to 10 inches; dark brown (10YR 4/3) silt loam; moderate fine granular structure; very friable, slightly sticky, nonplastic; few roots; neutral; clear wavy boundary.

B21 – 10 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few roots; many distinct black coats on ped faces; neutral; gradual wavy boundary.

B22 – 22 to 40 inches; light olive brown (2.5YR 5/4) silty clay loam; many fine and medium distinct yellowish red (5YR 4/6) and grayish brown (10YR 5/2) mottles; moderate coarse subangular blocky structure; friable, slightly sticky, slightly plastic; many distinct black coats on ped faces; neutral; gradual wavy boundary.

B3 – 40 to 50 inches; brown (10YR 5/3) silty clay loam; common medium distinct grayish brown (10YR 5/2) and yellowish red (5YR 4/6) mottles; moderate coarse subangular blocky structure; firm, slightly sticky, slightly plastic; neutral; clear wavy boundary.

C – 50 to 60 inches; dark brown (10YR 4/3) gravelly silty clay loam; common medium distinct yellowish brown (10YR 5/8) and light olive gray (5Y 6/2) mottles; massive; friable; 30 percent coarse fragments; neutral.

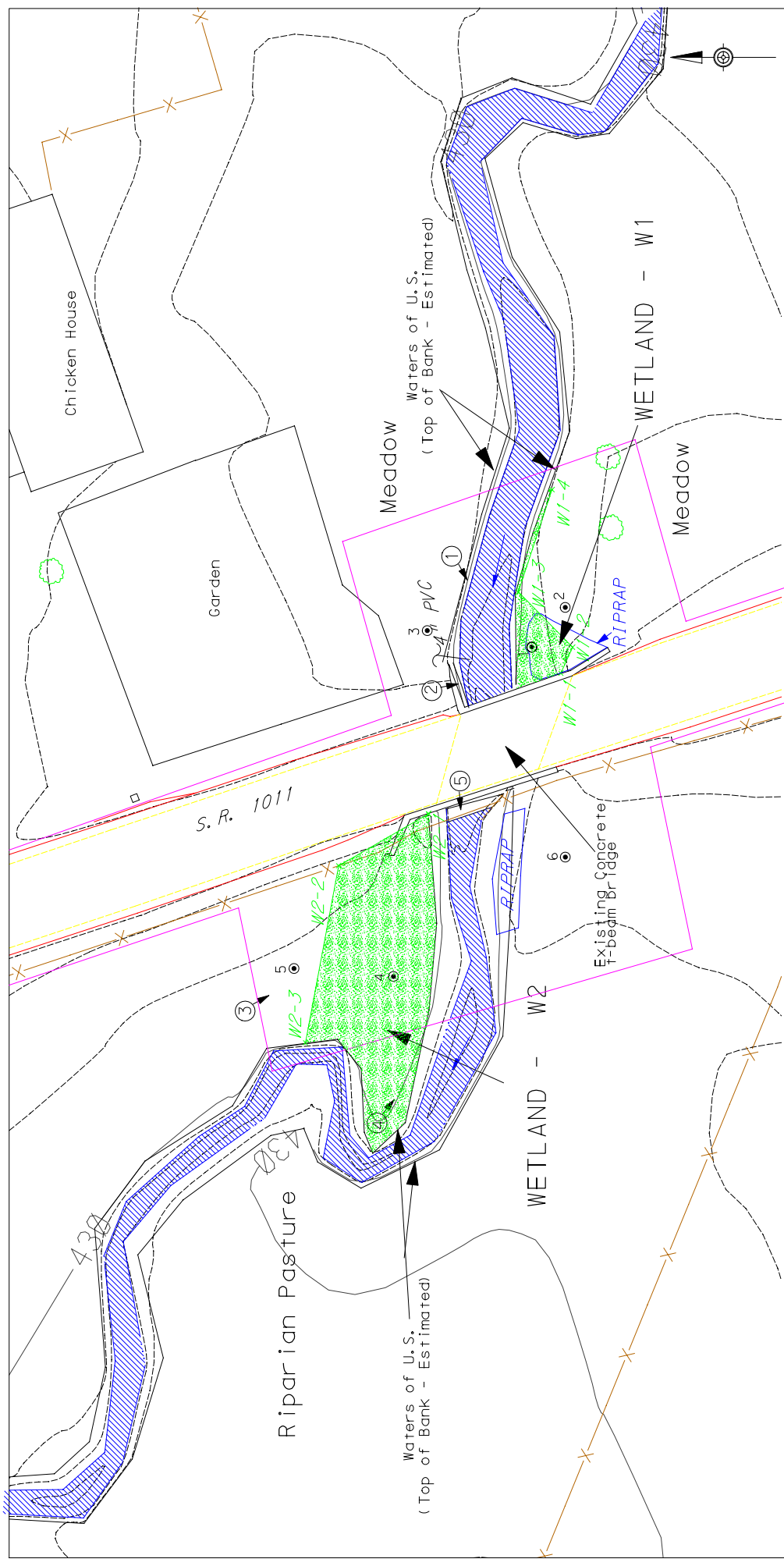
The solum thickness ranges from 25 to 50 inches. The depth to bedrock is more than 60 inches. The content of coarse fragments ranges from 0 to 5 percent in the solum and from 0 to 30 percent at a depth of more than 40 inches. Reaction ranges from strongly acid to neutral throughout.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 through 5, and chroma of 2 or 3. The fine-earth texture is silt loam or silty clay loam.

The B horizon has hue of 7.5YR through 2.5Y, value of 4 or 5, and chroma of 3 through 6. Low-chroma mottles are between depths of 14 and 24 inches. The fine-earth texture is silt loam or silty clay loam.

The C horizon has hue of 7.5YR through 2.5Y, value of 4 through 6, and chroma of 1 through 4. The fine-earth texture is silty clay loam, loam, or fine sandy loam and is weakly stratified.

APPENDIX D: Wetland Delineation Boundary Mapping



LEGEND

- Study Area
- Wetland
- Stream
- Shoulder
- Top of Bank
- Edge of Pavement
- Fence
- x W1-2
- Delimitation Flag No. & Location
- Delimited Wetland Boundary
- Soil Pit No. & Location
- Photograph No. & Location

S.R. 1011, SEC 002
**WETLAND DELINEATION
 BOUNDARY MAPPING**
 LANCASTER COUNTY, PA

Map Scale: 1" = 25'

