## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

# 6. AGENCY CONTACT INFORMATION

#### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552 Harrisburg, PA 17105-8552 Email: RA-HeritageReview@pa.gov

Fax:(717) 772-0271

## **PA Fish and Boat Commission**

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA 16823 Email: RA-FBPACENOTIFY@pa.gov

#### U.S. Fish and Wildlife Service

Pennsylvania Field Office **Endangered Species Section** 110 Radnor Rd; Suite 101 State College, PA 16801 **NO Faxes Please** 

#### **PA Game Commission**

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection

2001 Elmerton Avenue, Harrisburg, PA 17110-9797

Email: RA-PGC PNDI@pa.gov

**NO Faxes Please** 

# 7. PROJECT CONTACT INFORMATION

Name: JEFFREY E. SKINNER
Company/Business Name: BCM ENGINEERS
Address: 970 GERMANTOWN FISE, SUITE 200
City, State, Zip: PLYMOUTH MEETING, 14 19462
Phone:(610) 313-3100 Fax:(610)313-3151
Email: jeffrey Skinner @ atcassociates.com

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, pree to re-do the online environmental review.

applicant/project proponent signature



# United States Department of the Interior



#### FISH AND WILDLIFE SERVICE

Pennsylvania Field Office 110 Radnor Road, Suite 101 State College, Pennsylvania 16801-4850

December 8, 2016

Cheryl Matasovsky A.D. Marble 2200 Renaissance Bld., Suite 260 King of Prussia, PA 19406

RE:

USFWS Project #2017-0178

PNDI Receipt #605220

D	DEC	<u> </u>	I	V	<b>]</b>	M
H	DEC	1	2	20	16	y
-	177					

Dear Ms. Matasovsky:

Thank you for your letter dated November 2016, which provided the Fish and Wildlife Service (Service) with additional information regarding the proposed Eberclear S.R. 0010 and S.R. 0724 water main installation project located in the City of Reading, Borough of Birdsboro, and Robeson Township, Berks County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) to ensure the protection of endangered and threatened species.

This project is in the range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied intermediate successional stage wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

To determine the potential effects of the proposed project on bog turtles and their habitat, you, a recognized qualified bog turtle surveyor, conducted a Phase 1 bog turtle habitat assessment on July 19 and 20, 2016. According to the report, nine wetlands were identified within 300 feet of the proposed limit of disturbance. Following the methods described under "Bog Turtle Habitat Survey" (Phase 1 survey) of the Guidelines for Bog Turtle Surveys (revised April 2006), you determined that two wetlands (W5 and WA) met the criteria of soils, vegetation, and hydrology typical of habitat occupied by bog turtles. However, after review of the submitted information, although the criteria may have been met, we do not concur that the wetlands are likely to be

inhabited by bog turtles. Our conclusions are based on Wetland 5 being in an area of high disturbance and Wetland A only being able to be probed to a depth of 3 inches of muck.

Based on our review, we conclude that suitable bog turtle habitat within the surveyed area is not present; therefore, no adverse effects to the species are anticipated. This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office is recommended. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

If the Phase 1 habitat assessment did not include all wetlands in all areas that will be directly or indirectly affected by the proposed project and project-associated features (e.g., roads, water and sewer lines, utility lines, stormwater and sedimentation basins, buildings and other structures, driveways, parking lots, yards/lawns, wells), expand the scope of the Phase 1 survey to include these areas. If any wetlands are located, submit the results of the expanded wetland and Phase 1 investigation to our office for review so that we can confirm whether the above determination is still valid.

This response relates only to endangered and threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Bonnie Dershem of this office at (814) 234-4090 if you have any questions or require further assistance regarding this matter.

Sincerely,

Ina Z. Lattanzi

Field Office Supervisor



#### BUREAU OF FORESTRY

December 16, 2016

Jeffrey Skinner BCM Engineers

920 Germantown Pike, Suite 200 Plymouth Meeting, PA 19462

Email: Jeffrey.skinner@atcassociates.com (hard copy not to follow)

Re: Birdsboro Power LLC PA Route 724 Water Main Robeson Township, and Borough of Birdsboro, Berks County, PA

Dear Mr. Skinner,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Environmental Review Receipt Number PNDI-605225 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

#### No Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

DCNR recommends the following to help prevent the spread of invasive plant species and to encourage the use of native plants:

- Avoid using seed mixes that include invasive plant species if the project requires re-vegetating the area (<a href="http://www.ernstseed.com/seed-mixes/">http://www.ernstseed.com/seed-mixes/</a>). Please also attempt to use weed-free straw or hay mixes when possible. A complete list of all Pennsylvania invasive plant species can be found here:

<a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr\_20026634.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/documents/document/dcnr\_20026634.pdf</a>.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Frederick Sechler, Jr., Ecological Information Specialist, by phone (717-705-2819) or via email (c-freechle@pa.gov).

Sincerely,

Greg Podniesinski, Section Chief

Natural Heritage Section, DCNR Bureau of Forestry

Brug Porlmisinshi

PNDI Number: PNDI-605225



## Pennsylvania Fish & Boat Commission

**Division of Environmental Services** 

Natural Diversity Section 450 Robinson Lane Bellefonte, PA 16823 814-359-5237

March 20, 2017

IN REPLY REFER TO

SIR# 47043

BCM Engineers Jeffrey Skinner 920 Germantown Pike Plymouth Meeting, Pennsylvania 19462

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species

**PNDI Search No. 605225\_1** 

Birdsboro Power LLC PA Route 724 Water Main

BERKS County: Birdsboro Borough, Robeson Township

Dear Jeffrey Skinner:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be reinitiated.

Our Mission: www.fish.state.pa.us

If you have any questions regarding this review, please contact Robert Morgan at 814-359-5129 and refer to the SIR # 47043. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief Natural Diversity Section

Chirtopter Cl. Celum

CAU/RTM/dn



## **ATTACHMENT C**

**Experience of E&SC Plan Preparer** 



## **RECORD OF TRAINING AND EXPERIENCE**

IN EROSION AND SEDIMENTATION CONTROL METHODS AND TECHNIQUES

NAME OF PLAN PREPARER: <u>John Brandenburger</u>
FORMAL EDUCATION:
Name of college or technical institute: Montgomery County Community College Curriculum or program: Drafting and Design Dates of attendance: From: September 1987 to: May 1990 Degree received:
OTHER TRAINING:
Name of training: NPDES Phase II Post-Construction Stormwater Workshop Presented by: The Southeast Association of Conservation District Date: April 8, 2004
EMPLOYMENT HISTORY:
Current employer: BCM Engineers Telephone: (610) 313-3100 Former employer: Telephone: ( )

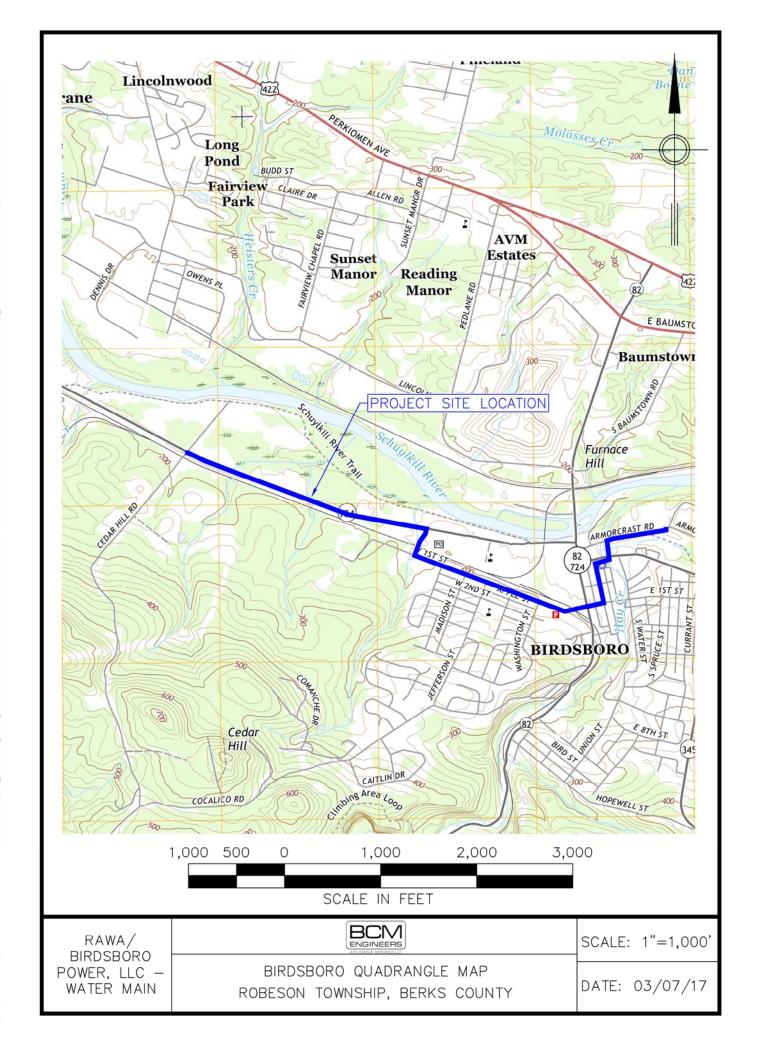
## RECENT EROSION AND SEDIMENTATION CONTROL PLANS PREPARED:

	#1	#2	#3	#4	#5
Name of Project:	Merrill Hills		Abington Edge Hill Phase 2	Ontelaunee Township	Robeson Twp. Water main extension
County:	Bucks, PA	Montgomery, PA	Montgomery, PA	Berks, PA	Berks, PA
Municipality:	North Penn Water Authority	Water Gwynedd		Ontelaunee Township	Robeson Township
Approving Agency:	Bucks County Conservation District	Montgomery County Conservation District	Montgomery County Conservation District	Berks County Conservation District	Berks County Conservation District



## **ATTACHMENT D**

**USGS** Quadrangle Location Map





## **ATTACHMENT E**

**NRCS Soil Survey Maps** 





## **ATTACHMENT F**

**NRCS Soil Use Limitations and Resolutions** 

	Soil Survey									
Symbol	AbA	BmB	LfA	PeB	PkC	RaB	ReA	Ua	UgB	UxB
Soil	Abbottstown Silt Loam	Birdsboro Silt Loam	Lamington Silt Loam	Penn Channery Silt Loam	Penn- Klinesville Channery Silt Loams	Raritan Silt Loam	Readington Silt Loam	Udorthents	Urban Land	Urban Land - Penn Complex
Drainage Class	Somewhat Poorly Drained	Well Drained	Poorly Drained	Well Drained	Well Drain	Moderately Well Drained	Moderately Well Drained	Moderately Well Drained	N/A	Well Drained
Slope Range	0 to 3%	3 to 8%	0 to 3%	3 to 8%	8 to 15%	3 to 8%	0 to 3%	0 to 8%	0 to 8%	0 to 8%
Hydrologic Group	D	В	D	В	В	C/D	С	N/A	N/A	В
Bedrock Depth	46 to 50"	72 to 99"	60 to 99"	20 to 40"	20 to 40"	60 to 99"	40 to 70"	10 to 100"	N/A	20 to 40"
Depth to Water Table	6 to 18"	24 to 72"	0 to 6"	>80"	>80"	6 to 31"	18 to 36"	>80"	N/A	>80"
Flooding Potential	None	None	None	None	None	None	None	None	N/A	None
Profile Permeability	Low	Moderate	Low	Low	Low	Low	Low	N/A	N/A	N/A
Hydric	No	No	Yes	No	No	No	No	No	No	No
Runoff classification	Moderately Low to Moderately High	Medium	Very High	Low	Low	Medium	Low	Very High	N/A	Very Low
Limitations	Depth to Water Table	Depth to Water Table	Depth to Water Table	Depth to Bedrock	Depth to Bedrock	Depth to Water Table	Depth to Water Table	Depth to Bedrock	N/A	Depth to Bedrock

Soil Limitations	Resolutions
Depth to Water Table	Manage Pumped Water
Depth to Bedrock	None
Ponding	Manage Pumped Water
Flooding	Manage Pumped Water

The potential for erosion of exposed soil is addressed by strict adherance to the following requirements:

- 1. The seeding and mulching specifications
- 2. Installation of erosion control measures indicated on the approved erosion and sedimentation control plans
- 3. By limiting the area, extent and maximum amount of soil disturbance occurring at any one time
- 4. By limiting the cut and fill slopes to maximum 1:3 vertical to horizontal where possible
- 5. Compliance with the sequence of construction operations.



## **ATTACHMENT G**

**Experience of PCSM Plan Preparer** 



## RECORD OF TRAINING AND EXPERIENCE

#### IN EROSION AND SEDIMENTATION CONTROL METHODS AND TECHNIQUES

NAME OF PLAN PREPARER: <u>Jeffrey E. Skinner</u>							
FORMAL EDUCATION:							
Name of college or technical institute: <u>Pennsylvania State University</u> Curriculum or program: <u>Architectural Engineering</u> Dates of attendance: From: <u>September 1983</u> to: <u>May 1987</u> Degree received: <u>Bachelor of Architectural Engineering</u>							
OTHER TRAINING:							
Name of training:Presented by:							
_ = ===================================							

## **EMPLOYMENT HISTORY:**

Current employer: BCM Engineers

Telephone: (610) 313-3100

Former employer: William G. Majors Assoc.

Telephone: (215) <u>785-3288</u>

#### RECENT NPDES PLANS PREPARED:

	#1	#2	#3	#4	#5
Name of Project:	30" Water Transmission Main	Sanitary Sewer Interceptor Replacement	Bristol Commerce Center	Decker Land Development	Silvi Industrial Development
County:	Bucks, PA	Montgomery, PA	Bucks, PA	Bucks, PA	Bucks, PA
Municipality:	North Penn Water Authority	Cheltenham Township	Bristol Township	Bristol Township	Bristol Township
Approving Agency:	Bucks County Conservation District	Montgomery County Conservation District	Bucks County Conservation District	Bucks County Conservation District	Bucks County Conservation District



## **ATTACHMENT H**

**Wetlands Report** 



October 4, 2016

Mr. Dean Miller, Executive Director Reading Area Water Authority 1801 Kutztown Road Reading, PA 19604

RE: Aquatic Resources Letter Report
Emberclear Water Main, S.R. 0010 and S.R. 0724 Installation Project
City of Reading, Town of Birdsboro, and Robeson Township,
Berks County, Pennsylvania

Dear Mr. Miller:

A.D. Marble has conducted an aquatic resources investigation along the corridors of S.R. 0010 and S.R. 0724 for the Emberclear Water Main projects in the City of Reading, the Borough of Birdsboro, and Robeson Township, Berks County, Pennsylvania (Enclosure A: Figures 1A and 1B). The Emberclear Water Main project incorporates two locations for its project area: S.R. 0010 in the City of Reading and S.R. 0724 in Birdsboro and Robeson Township. The project consists of a proposed water main line installment along a 1.3-mile corridor in the S.R. 0010 project area and a 2.4-mile corridor in the S.R. 0724 project area. The construction width is 10 feet on paved surfaces and 40 feet on non-paved surfaces.

The desktop review included the examination of the following maps: the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) soils map, the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map, and the Federal Emergency Management Agency (FEMA) 100-year floodplain map.

Based on the USDA-NRCS soil data, there are a total of 20 soil mapping units within the project areas (Enclosure A: Figures 2A and 2B). Three soil mapping units (Bowmansville-Knauers silt loams (Bo); Holly silt loam (Ho), and Lamington silt loam, 0 to 3 percent slopes (LfA) contain hydric soils components.

The USFWS NWI maps (Enclosure A: Figures 3A and 3A) indicate one NWI mapped palustrine, unconsolidated bottom, permanently flooded, diked/impounded (PUBHh) wetland is adjacent to the S.R. 0010 project area and several NWI mapped palustrine forested/scrub-shrub/emergent (PFO1/PSS/PEM) wetlands are adjacent to the S.R. 0724 project area; however, no NWI mapped wetlands are within the project areas. The FEMA map also indicates a southern portion of the S.R. 0010 project area is within the 100-year floodplain of Angelica Creek and the eastern portion of the S.R. 0724 project area is within the 100-year floodplain of Hay Creek.

The project area was defined by the engineers to encompass all anticipated ground disturbance for the proposed water main installations. After the wetland investigation was completed, a portion of the S.R. 0724 project area between W 1<sup>st</sup> Street and S.R. 0724 was rerouted to parallel Jackson Street to avoid landowner issues. Waterways present in this section are contained within a culvert or a concrete-lined channel. These waterways were not delineated, and the approximate locations are noted on the figures in this report. The project study area of the two locations combined is approximately 15.9 acres in size and is depicted on Figures 1 to 4 (Enclosure A). The study area includes residential, commercial, industrial, transportation, utility, forested, and public and private land uses.

The wetland investigation was conducted in accordance with the U.S. Army Corps of Engineers' (USACE) Wetlands Delineation Manual (1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Regional Supplement, Version 2.0 (January 2012); the Pennsylvania Department of Environmental Protection (PADEP) Chapter 105 Regulations; and Section 404 of the Federal Clean Water Act. Wetland habitats were classified according to the USFWS's Classifications of Wetlands and Deepwater Habitats of the United States (1979). Pertinent information, including dominant vegetation, hydric soil indicators, wetland hydrology indicators, and types of disturbance (if applicable), was recorded on the attached wetland determination data forms (Enclosure C).

As a result of the field investigations, five wetlands and nine waterways were delineated within the project area. Table 1 is a summary table of the wetlands, and Table 2 is a summary of the waterways within the project area. Detailed descriptions of wetlands and waterways are provided

below. Figures 4A to 4M depict the locations of these aquatic resources. Photographs are included as Enclosure B; and wetland data sheets are provided as Enclosure C.

Table 1. Wetlands Summary.

Resource ID	Classification	Figure 4	Size (acre)	Size (acre) Within	Open
		<b>Sheet Location</b>		Project Study Area	Ended?
Wetland 1	POW	Figure 4M	0.05	NA	No
Wetland 2	PEM	Figure 4L	0.04	NA	Yes
Wetland 3	PEM	Figure 4L	0.03	0.02	Yes
Wetland 4	PFO	Figure 4H	0.02	NA	No
Wetland 5	PEM	Figure 4F	0.23	NA	No

PEM – Palustrine emergent

PFO - Palustrine forested

POW – Palustrine open water

Table 2. Waterways Summary.

Resource ID	Waterway Name	Figure 4	Chapter 93	Approved	Size (linear feet)
		Sheet Location	Classification	Trout	Within Project
				Water	Study Area
Waterway 1	Angelica Creek	Figures 4D, 4E	CWF, MF	No	85
Waterway 2	Hay Creek	Figures 4L, 4M	CWF, MF	Yes	80
Waterway 3	UNT to the Schuylkill	Figure 4H	WWF, MF	No	No
	River				
Waterway 4	UNT to the Schuylkill	Figures 4G, 4H	WWF, MF	No	No
	River				
Waterway 5	UNT to the Schuylkill	Figure 4F	WWF, MF	No	No
	River				
Waterway 6	UNT to the Schuylkill	Figure 4F	WWF, MF	No	No
	River				
Waterway 7	UNT to the Schuylkill	Figure 4F	WWF, MF	No	No
	River				
Waterway 8	UNT to the Schuylkill	Figure 4I	WWF, MF	No	No
	River				
Waterway 9	UNT to the Schuylkill	Figure 4I	WWF, MF	No	No
	River				

CWF, MF - Cold Water Fishery, Migratory Fishery

WWF, MF – Warm Water Fishery, Migratory Fishery

#### **WETLANDS**

Five wetlands were delineated within the project area and are described below.

#### Wetland 1

Wetland 1 is a POW wetland with herbaceous vegetation along the edge of the wetland. Wetland 1 was 0.05 acre in size and located within the S.R. 0724 project area in a drainage ditch adjacent to Armorcast Road in Birdsboro. Wetland 1 is within the 100-year floodplain of Hay Creek.

Wetland 1 was an isolated wetland that contained no inlet or outlet. Vegetation was scarce within the wetland; however, dominant vegetation growing along the edge of the open water included *Phragmites australis* (common reed), *Rosa multiflora* (multiflora rose), *Toxicodendron radicans* (poison ivy), *Muscadine rotundifolia* (grapevine), and *Lythrum salicaria* (purple loosestrife). The vegetation in Wetland 1 passed the dominance and prevalence index tests for hydrophytic vegetation.

Soil test pits were dug to observe soils matrix colors and hydric soil indicators; however, a soil profile was inaccessible due to the loose soil profile within the water column. Because hydrophytic vegetation and hydrological indicators of surface water (A1), high water table (A2), saturation (A3), sparsely vegetated concave surface (B8), and microtopographic relief (D4) were present, it was assumed soils within Wetland 1 were hydric. Surface water within Wetland 1 was at a depth of 14 inches, and saturation was present at the surface.

#### Wetland 2

Wetland 2 is a PEM wetland approximately 0.04 acre in size located within the S.R. 0724 project area along the right bank of Hay Creek (Waterway 2) in Birdsboro. The wetland shared the same hydrology and soils as Wetland 3, but was separated by the East Main Street bridge over Waterway 2. Wetland 2 is within the 100-year floodplain of Hay Creek. Herbaceous vegetation was diverse, with dominant vegetation of *Typha latifolia* (broadleaf cattail), *Impatiens capensis* (spotted jewelweed), *Salix nigra* (black willow), *Platanus occidentalis* (American sycamore), poison ivy, and grapevine. The vegetation in Wetland 2 passed the dominance and prevalence index tests for hydrophytic vegetation.

Soil test pits were dug to observe soil matrix colors and hydric soil indicators. From 0 to 7 inches, the soil was a dark brown (7.5YR 3/2) loam with red (7.5YR 4/4) redoximorphic features. A rock restrictive layer was present at 7 inches. Wetland 2 met the redox dark surface (F6) indicator of hydric soils. Indicators of wetland hydrology observed within Wetland 2 included surface water (A1) at the ground surface, a high water table (A2), saturation (A3), and geomorphic position (D2).

#### Wetland 3

Similar to Wetland 2, Wetland 3 is a PEM wetland approximately 0.02 acre in size located within the S.R. 0724 project area and continued southeast along the right bank of Hay Creek (Waterway 2) in Birdsboro. The wetland shared the same hydrology and soils as Wetland 2, but was separated by the East Main Street bridge over Hay Creek. Wetland 3 is within the 100-year floodplain of Hay Creek. Dominant vegetation in the wetland included *Phalaris arundinacea* (reed canary grass), spotted jewelweed, and black willow. The vegetation in Wetland 3 passed the dominance and prevalence index tests for hydrophytic vegetation.

Soil test pits were dug to observe soil matrix colors and hydric soil indicators. From 0 to 8 inches, the soil was a dark brown (7.5YR 3/2) loam with red (7.5YR 4/4) redoximorphic features. A rock restrictive layer was present at 8 inches. Wetland 3 met the redox dark surface hydric soil indicator. Indicators of wetland hydrology observed within Wetland 3 included a high water table (A2) at 2 inches, saturation (A3) at the surface, and geomorphic position (D2).

#### Wetland 4

Wetland 4 is a PFO wetland located south of S.R. 0724 and adjacent to Waterway 3. The wetland was 0.02 acre in size and within a concave depressed area that received stormwater runoff from S.R. 0724. During stormwater events, it is likely that hydrology from Wetland 4 is conveyed into Waterway 3. Dominant vegetation within the wetland included *Acer negundo* (box elder) and spotted jewelweed. The vegetation in Wetland 4 passed the dominance and prevalence index tests for hydrophytic vegetation.

Soil test pits were dug to observe soil matrix colors and hydric soil indicators. From 0 to 4 inches, the soil was a dark brown (5YR 4/1) loam with reddish-brown (5YR 4/4) redoximorphic features, and contained a co-matrix from 4 to 18 inches of grey (5YR 7/1) and reddish brown (5YR 4/4) loam with dark brown (5YR 3/2 and 2.5YR 4/3) redoximorphic features. The soils in Wetland 4 met the depleted matrix (F3) indicator for hydric soils. Indicators of wetland hydrology observed within Wetland 4 included drainage patterns (B10) and microtopographic relief (D4).

#### Wetland 5

Wetland 5 is a PEM wetland located south of S.R. 0724 and draining to Waterway 7. The wetland was 0.23 acre in size and within a concave depressed area that contained groundwater seeps and stormwater runoff form S.R. 0724. During stormwater events, it is likely that hydrology from Wetland 5 is conveyed into Waterway 7. Dominant vegetation within the wetland included reed canary, spotted jewelweed, and purple loosestrife. The vegetation in Wetland 4 passed the dominance and prevalence index tests for hydrophytic vegetation.

Soil test pits were dug to observe soil matrix colors and hydric soil indicators. From 0 to 24 inches, the soil was a strong dark brown (7.5YR 2/1) muck. The soils in Wetland 5 met the 2-centimeter muck (A10) indicator for hydric soils. Indicators of wetland hydrology observed within Wetland 5 included surface water (A1) at 4 inches, high water table (A2), saturation (A3), and drainage patterns (B10).

#### **WATERWAYS**

#### Waterway 1

Waterway 1 (Angelica Creek) is a perennial waterway within the project area. Waterway 1 flows roughly northwest to southeast in the southern portion of the S.R. 0010 project area. The waterway crosses under S.R. 0010 and parallels the Angelica Creek Trail. Waterway 1 averages 0.5 foot in depth and 20 feet in width. The substrate is predominantly cobble, gravel, and sand. Chapter 93 designates Waterway 1 as a CWF, MF. Waterway 1 is not listed by the Pennsylvania Fish and Boat Commission (PFBC) as an approved trout water or a Class A Wild Trout Stream. Angelica Creek is a Stream Listed with Naturally Reproducing Trout 1.5 miles upstream of the project area; however, no in-stream restrictions will be required for the proposed project.

#### Waterway 2

Waterway 2 (Hay Creek) is a perennial waterway within the project area. Waterway 2 flows roughly south to north in the eastern portion of the S.R. 0724 project area. The waterway crosses under S.R. 0724 in Birdsboro. Waterway 2 averages 0.5 foot in depth and 30 feet in width. The substrate is predominantly boulder, cobble, gravel, and silt. Chapter 93 designates Waterway 2 as a CWF, MF. Waterway 2 is listed by the PFBC as an approved trout water, a Stream Listed with

Naturally Reproducing Trout, and as an approved trout stream. In-stream restrictions will be required between March 1 through June 15 and October 1 through December 31.

#### Waterway 3

Waterway 3 is an ephemeral unnamed tributary (UNT) to the Schuylkill River and is located in the S.R. 0724 project area. The waterway originated from West 1<sup>st</sup> Street and extended northeast through a culvert under an active railroad and S.R. 0724. Waterway 3 contained 0.5-inch deep water in shallow pools. There was no other surface water within the waterway at the time of survey. The substrate is composed primarily of cobble and silt. Waterway 3 contains hydrology runoff from Wetland 4. Waterway 3 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 4

Waterway 4 is an intermittent UNT to the Schuylkill River and is located in the S.R. 0724 project area. Water flows from the southeast to the northwest through a culvert under an active railroad and S.R. 0724. Waterway 4 contained 1-foot deep pools at the location of the culverts at the time of survey, with fish present within the pools. There was no other surface water within the waterway at the time of survey. The substrate is composed primarily of cobble, gravel, and silt. Waterway 4 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 5

Waterway 5 is an ephemeral UNT to the Schuylkill River and is located in the S.R. 0724 project area between S.R. 0724 and an active railroad. Water flows in an east to west direction parallel to S.R. 0724 and into Waterway 6. There was no surface water present within Waterway 5 at the time of survey. The substrate is composed primarily of gravel and silt. Waterway 5 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 6

Waterway 6 is a perennial UNT to the Schuylkill River and is located in the S.R. 0724 project area. Water flows in a southwest to northeast direction through a culvert under an active railroad and S.R. 0724. Waterway 6 receives hydrology from Waterways 5 and 7. Waterway 6 contained 1 inch of surface water at the time of survey. Hydrophytic vegetation such as *Lemna minor* (duckweed) is present within the waterway. The waterway substrate is composed gravel and silt. Waterway 6 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 7

Waterway 7 is an intermittent UNT to the Schuylkill River and is located in the S.R. 0724 project area between S.R. 0724 and an active railroad. Waterway 7 conveys hydrology from Wetland 5 into Waterway 6. The substrate is composed primarily of gravel and silt. Waterway 7 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 8

Waterway 8 is a perennial UNT to the Schuylkill River and is located in the S.R. 0724 project area. Water flows from the southwest to the northeast through a culvert under West 1<sup>st</sup> Street, then through a concrete-lined channel under a railroad, and finally through another culvert under S.R. 0724 and into the Schuylkill River. The original project area extended west on West 1<sup>st</sup> Street, crossing over Waterway 8. Since the time of wetland and waterways delineation, the proposed location of the water line was rerouted northeast along Jackson Street, turning west on S.R. 0724. Waterway 8 receives hydrology from Waterway 9. Waterway 8 averages 2 inches in depth and 10 feet in width. The waterway substrate was composed of cobble and gravel. Waterway 8 is not listed by the PFBC as an approved trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No in-stream restrictions will be required.

#### Waterway 9

Waterway 9 is an ephemeral UNT to the Schuylkill River and was located in the S.R. 0.724 project area. Water flows in an east to west direction parallel to West 1<sup>st</sup> Street and into

Waterway 8. There was no surface water within the waterway at the time of survey. The

waterway substrate is composed of gravel. Waterway 9 is not listed by the PFBC as an approved

trout water, Class A Wild Trout Stream, or Stream Listed with Naturally Reproducing Trout. No

in-stream restrictions will be required.

**SUMMARY** 

On July 19 and 20, 2016, A.D. Marble identified and delineated five wetlands (one POW, one

PFO, and three PEM habitats) and nine waterways in accordance with the USACE's Wetlands

Delineation Manual (1987) and Regional Supplement to the Corps of Engineers Wetland

Delineation Manual: Eastern Mountains and Piedmont Regional Supplement, Version 2.0

(January 2012); the PADEP Chapter 105 Regulations; and Section 404 of the Federal Clean

Water Act.

A.D. Marble appreciates this opportunity to be of service to you. Please contact Cheryl

Matasovsky at 484-533-2522 or cmatasovsky@admarble.com with any comments or questions

regarding this study.

Sincerely,

A.D. Marble

Cheryl Matasovsky

Senior Environmental Scientist

Muy Marine

**Enclosures** 

Enclosure A: Figures

Enclosure B: Photographs

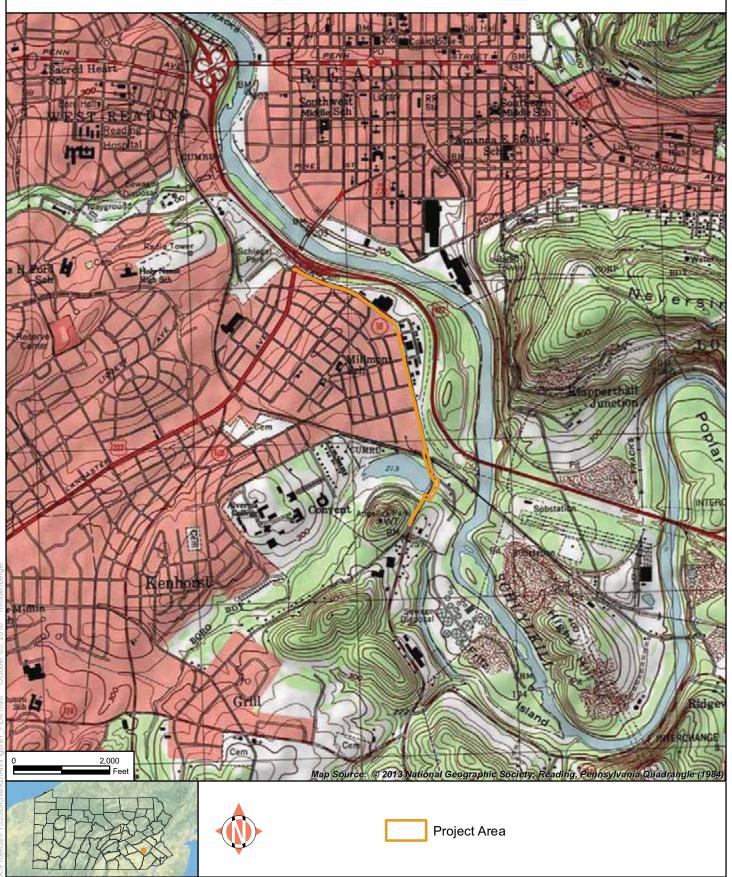
Enclosure C: Wetland Data Sheets

Emberclear Water Main, S.R. 0010 and S.R. 0724 Installation Project Aquatic Resources Letter Report

**Enclosure A: Figures** 

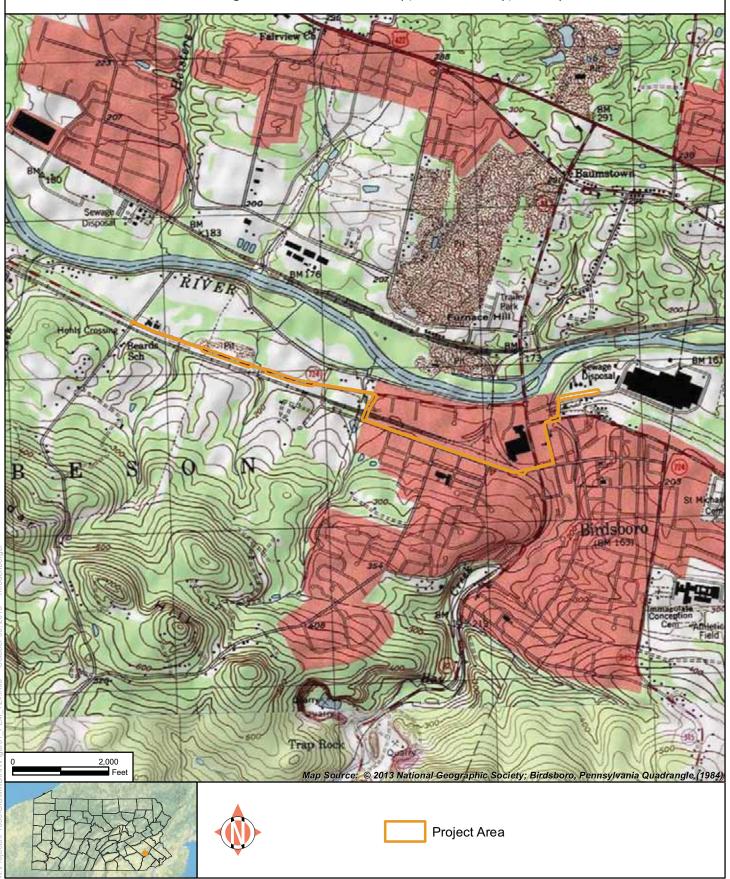
# Figure 1A Project Location Map

S.R. 0010 Emberclear Water Main City of Reading, Berks County, Pennsylvania



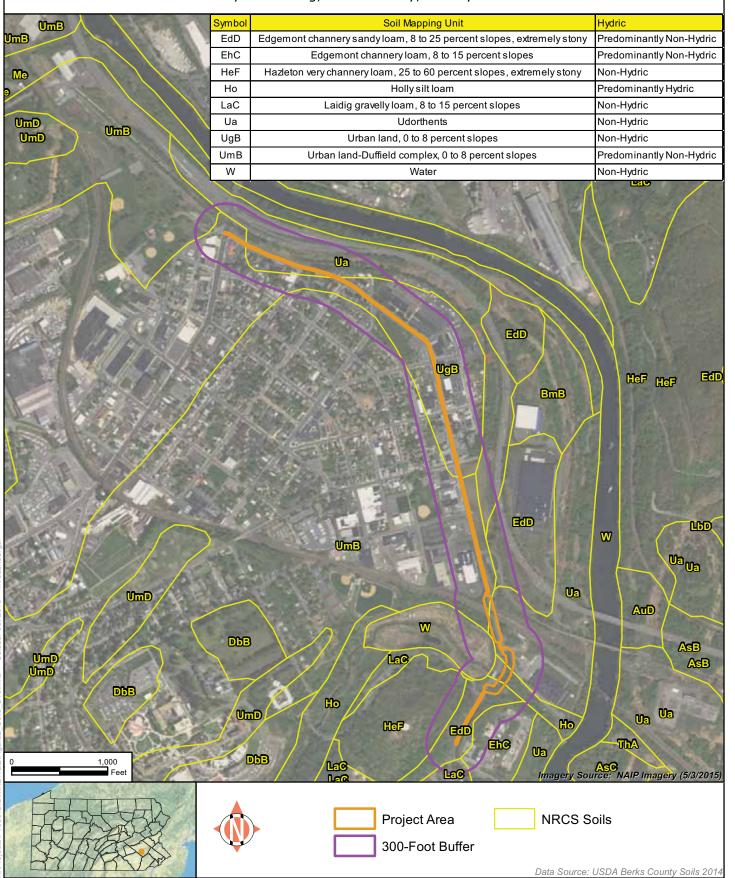
## Figure 1B Project Location Map

S.R. 0724 Emberclear Water Main Birdsboro Borough and Robeson Township, Berks County, Pennsylvania



## Figure 2A Soils Map

S.R. 0010 Emberclear Water Main City of Reading, Berks County, Pennsylvania



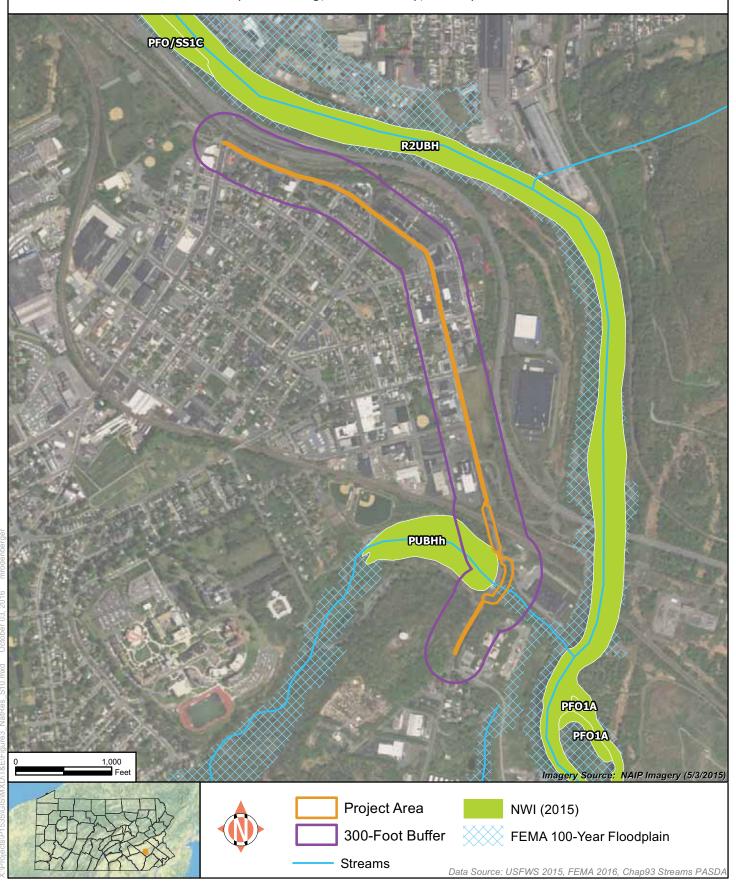
## Figure 2B Soils Map

S.R. 0724 Emberclear Water Main Birdsboro Borough and Robeson Township, Berks County, Pennsylvania

		p,
Symbol	Soil Mapping Unit	Hydric PkD
AbA	Abbottstown silt loam, 0 to 3 percent slopes	Predominantly Non-Hydric ReA Pro Pro
BmB	Birdsboro silt loam, 3 to 8 percent slopes	Predominantly Non-Hydric
Во	Bowmans ville-Knauers silt loams	Partially Hydric Rec
Gc	Gibraltar silt loam	Predominantly Non-Hydric
LfA	Lamington silt loam, 0 to 3 percent slopes	Predominantly Hydric Pas
PeB	Penn channery silt loam, 3 to 8 percent slopes	Predominantly Non-Hydric
PkC	Penn-Klines ville channery silt loams, 8 to 15 percent slopes	Predominantly Non-Hydric Peg
PkD	Penn-Klines ville channery silt loams, 15 to 25 percent slopes	Predominantly Non-Hydric ReA
RaB	Raritan silt loam, 3 to 8 percent slopes	Predominantly Non-Hydric
ReA	Readington silt loam, 0 to 3 percent slopes	Predominantly Non-Hydric
Ro	Rowland silt loam	Predominantly Non-Hydric
Ua	Udorthents	Non-Hydric
UgB	Urban land, 0 to 8 percent slopes	Non-Hydric PeB
UxB	Urban land-Penn complex, 0 to 8 percent slopes	Predominantly Non-Hydric
	BmB RaB BmB	PRO
JnB JnG PeB	PeB BmB Ro AbA PkG PeB	Ge Wes Us Ugs
Jne	PcB PcB PcB PcB PcB PcB PcB	Ug3 Ux3
BSD Nindo	JpD JnB PkG PkG PkG PkG Project PkG Project PkG Project PkG	PeB PtD PtD Bo
子		Data Source: USDA Berks County Soils 2014

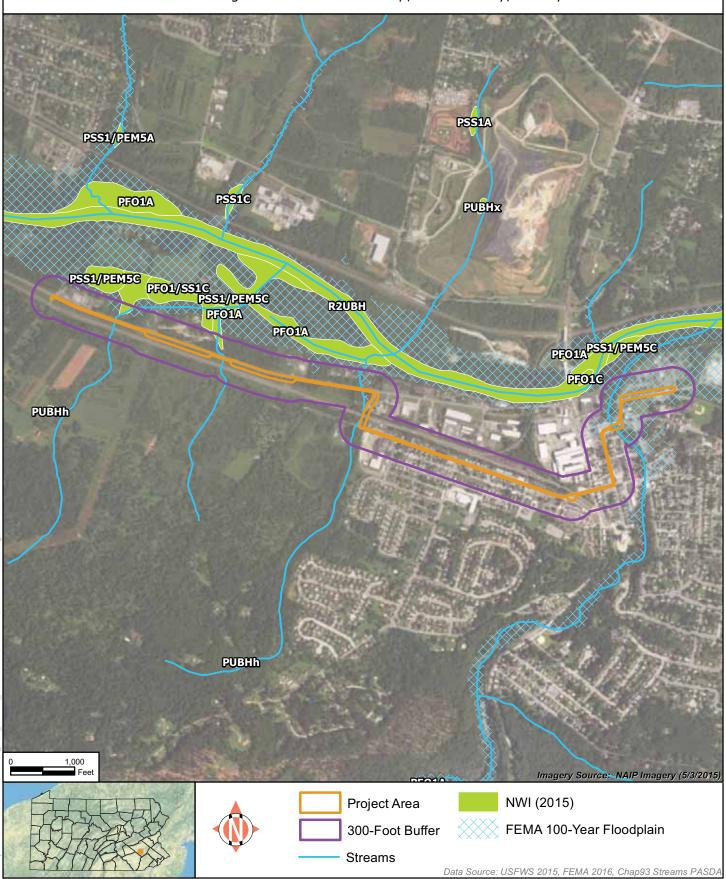
## Figure 3A Natural Resources

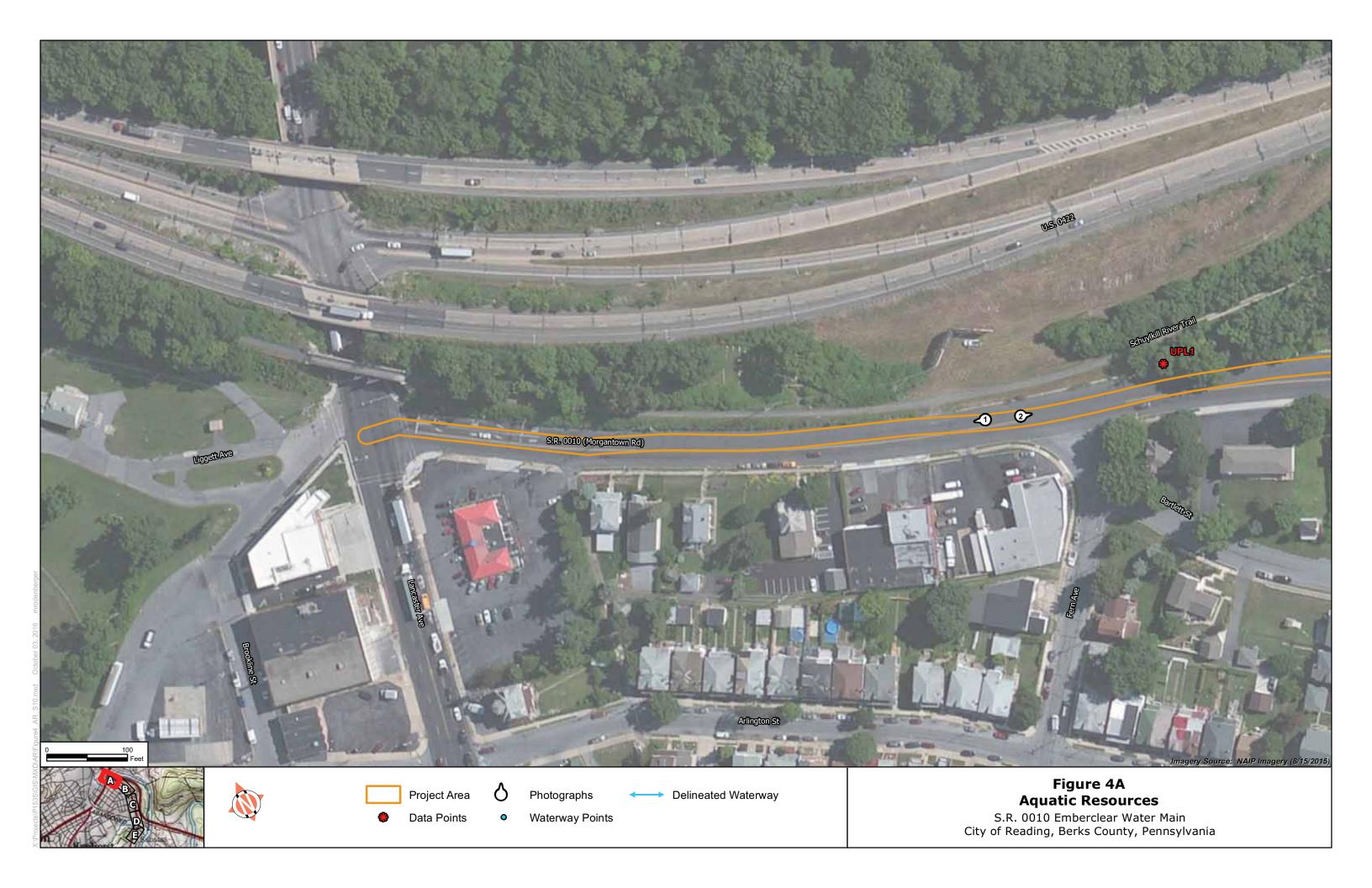
S.R. 0010 Emberclear Water Main City of Reading, Berks County, Pennsylvania



## Figure 3B Natural Resources

S.R. 0724 Emberclear Water Main Birdsboro Borough and Robeson Township, Berks County, Pennsylvania

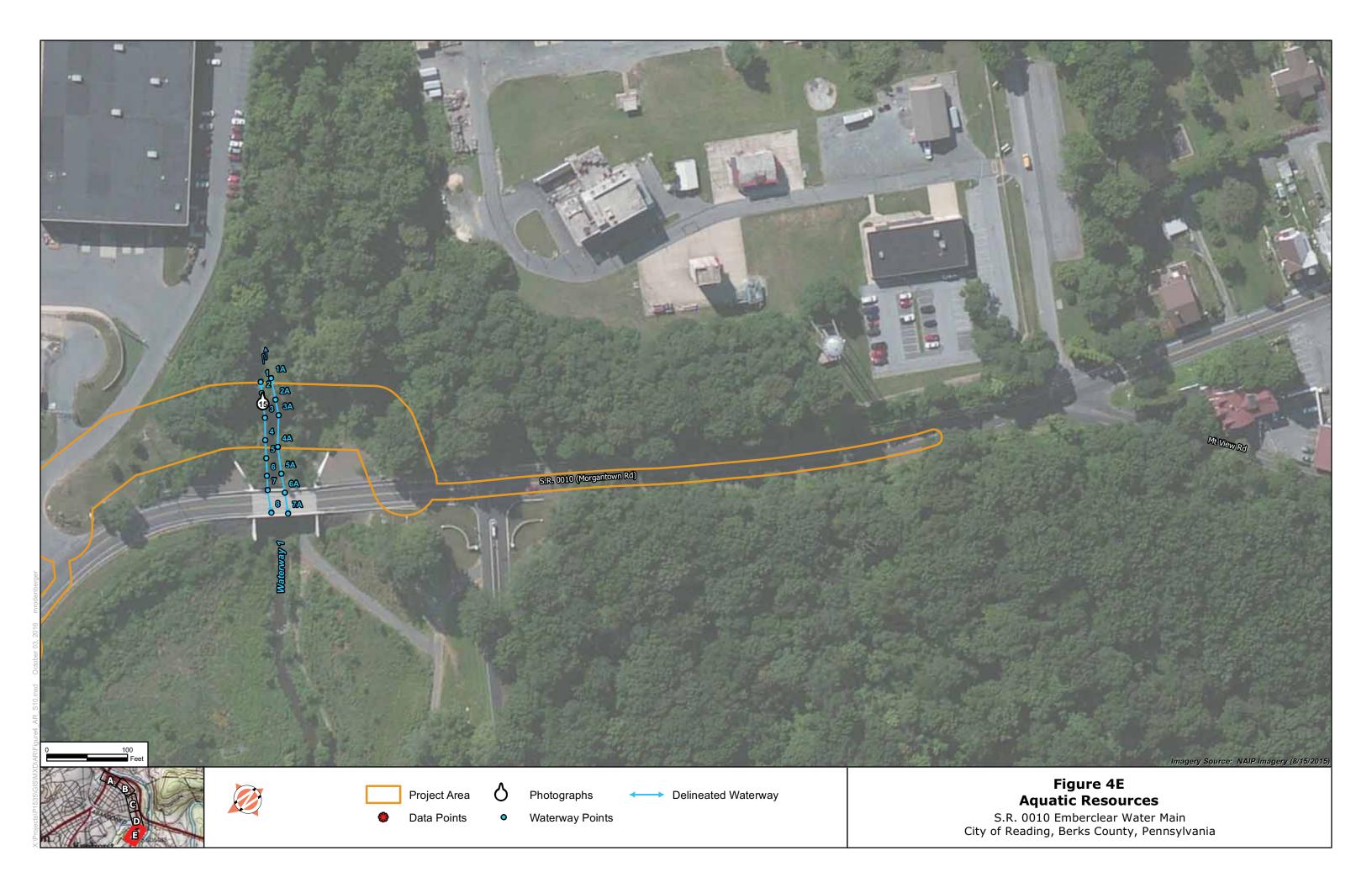


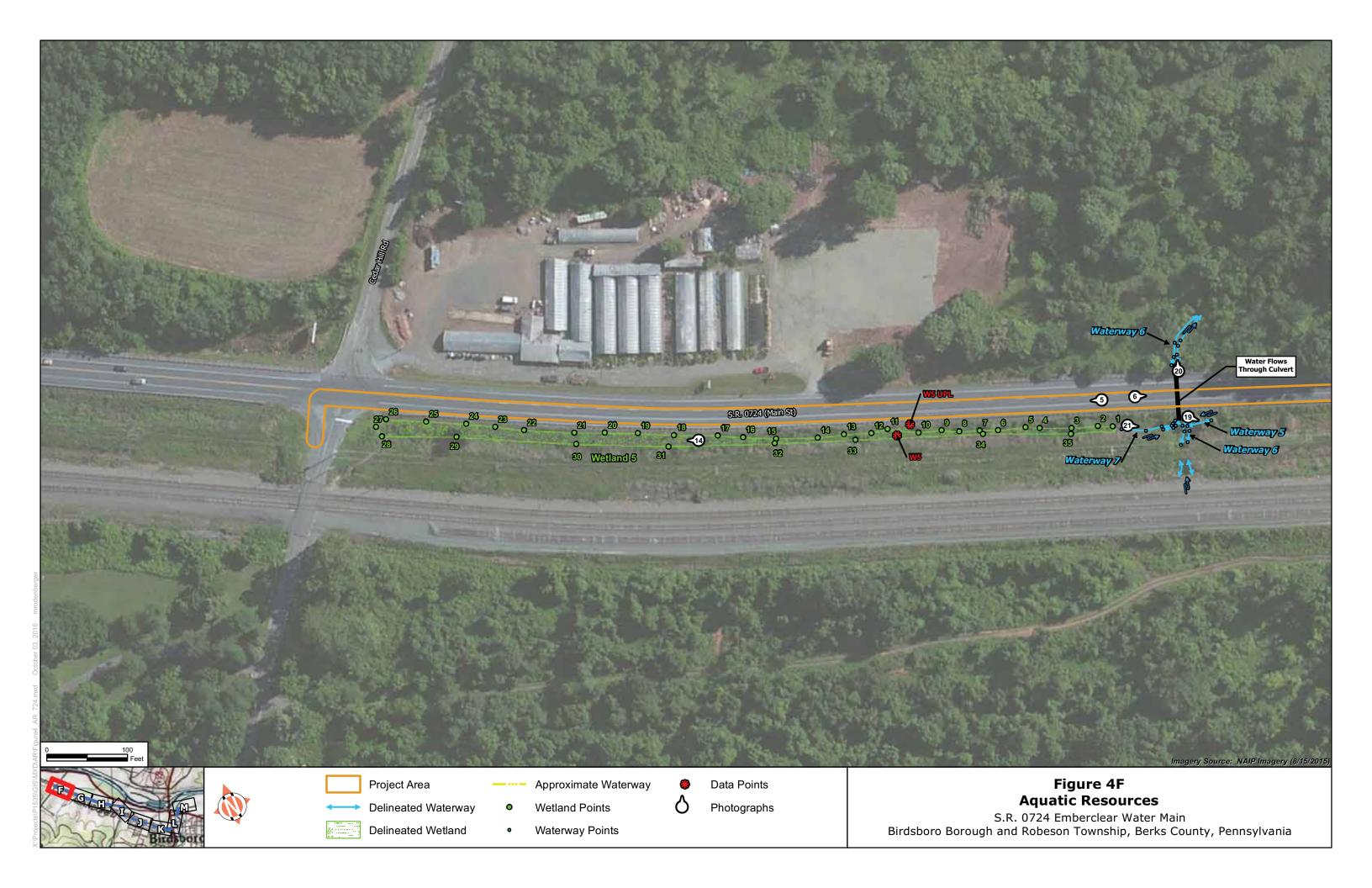


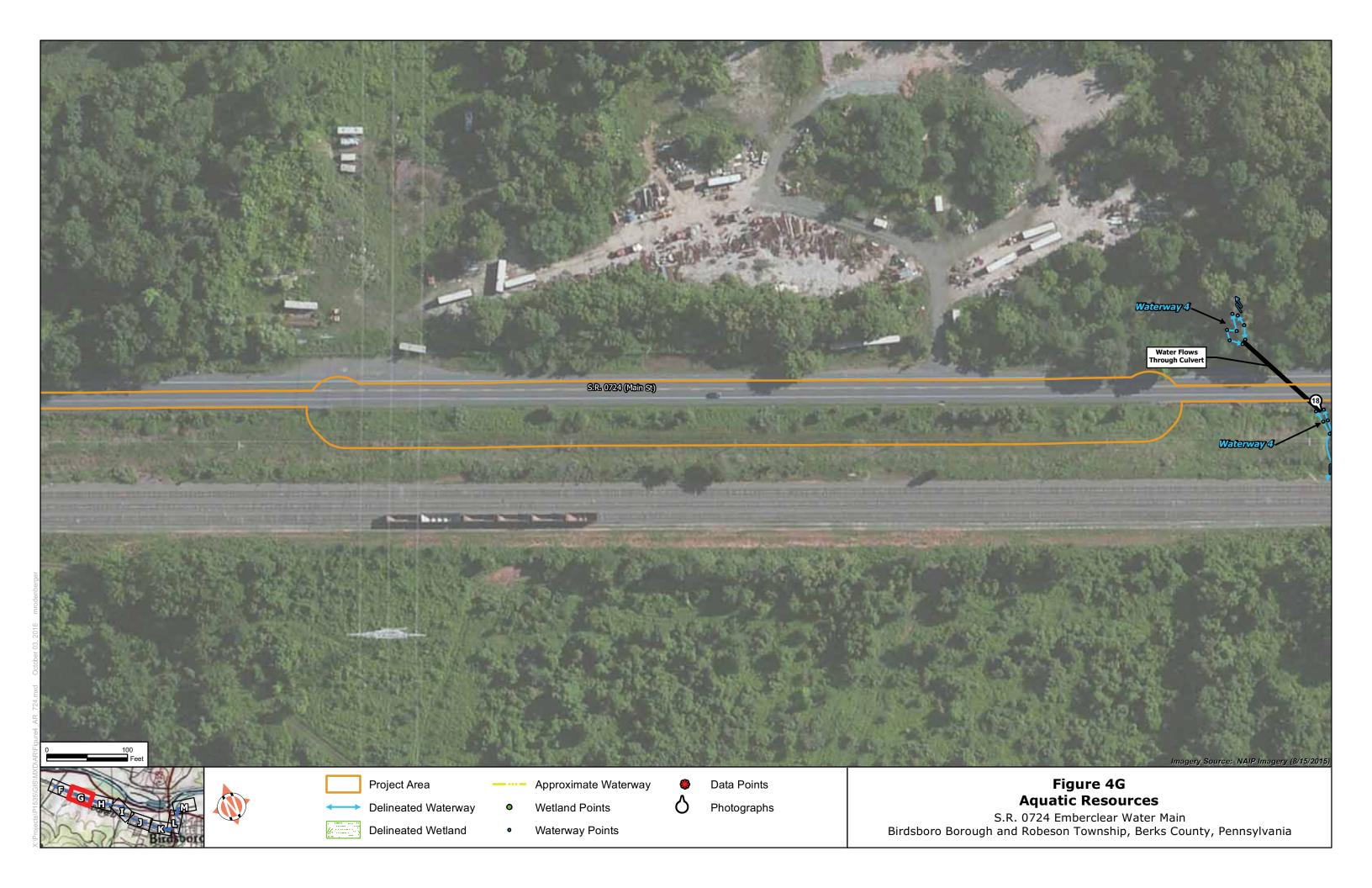




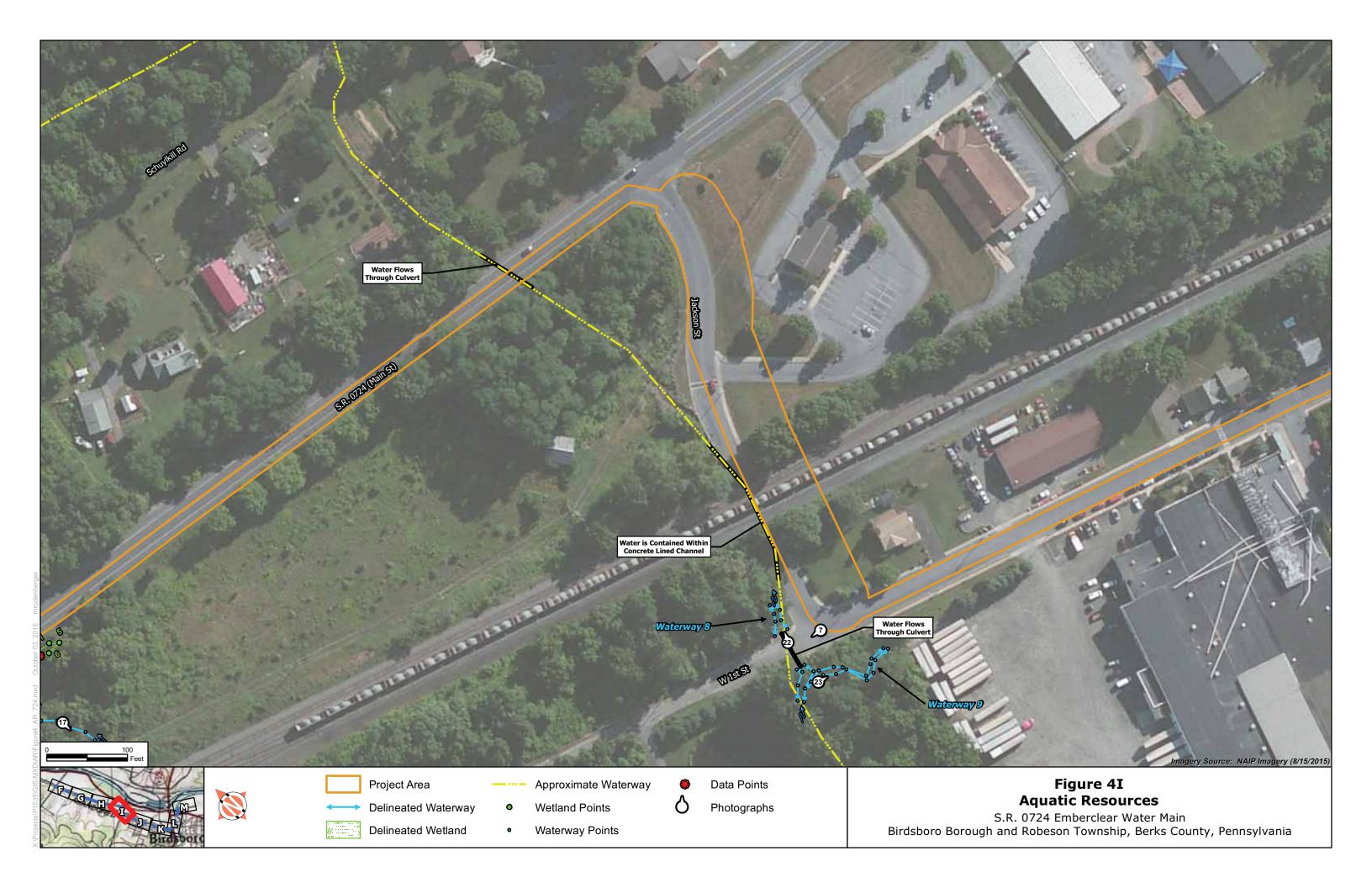








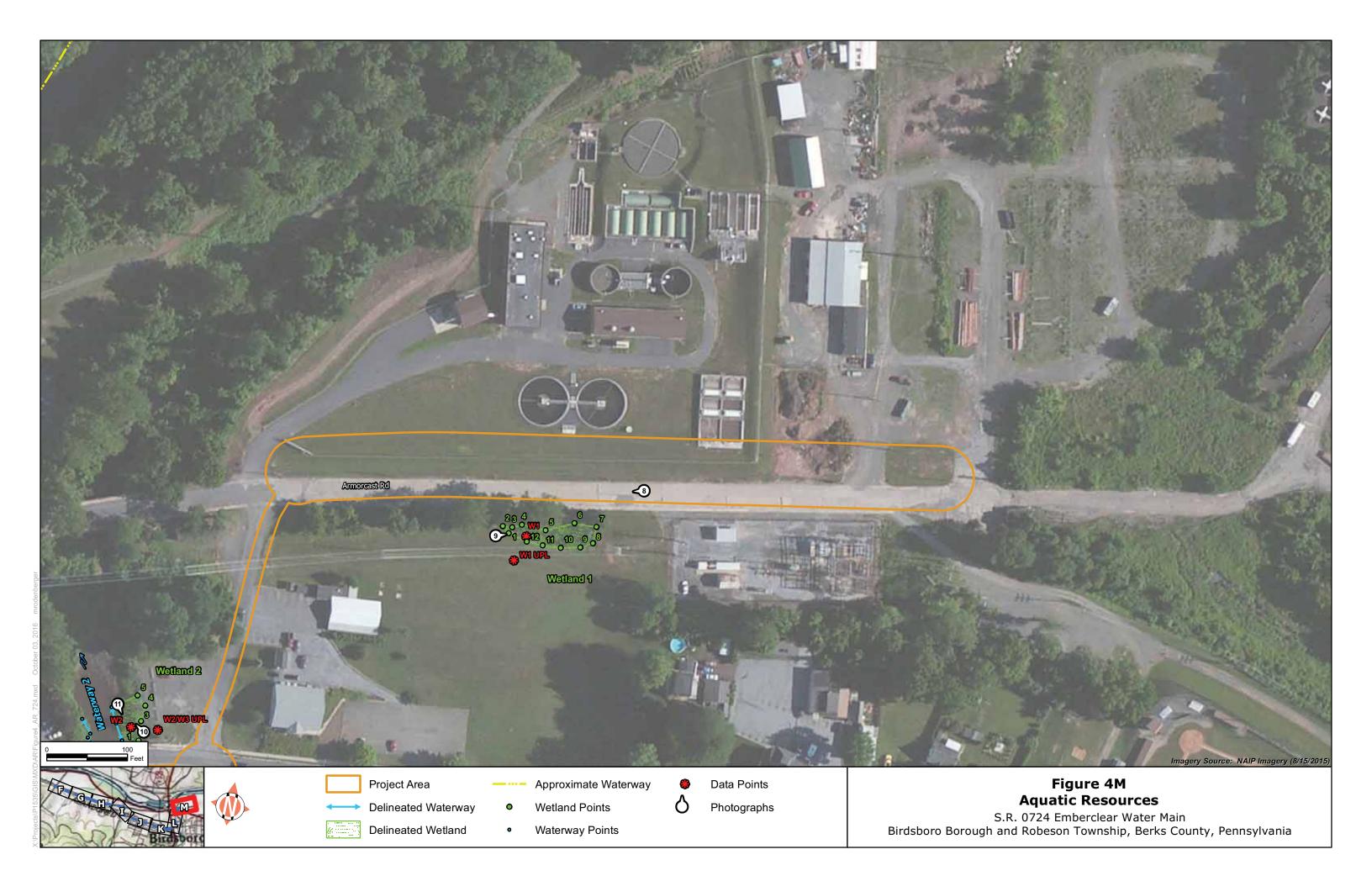


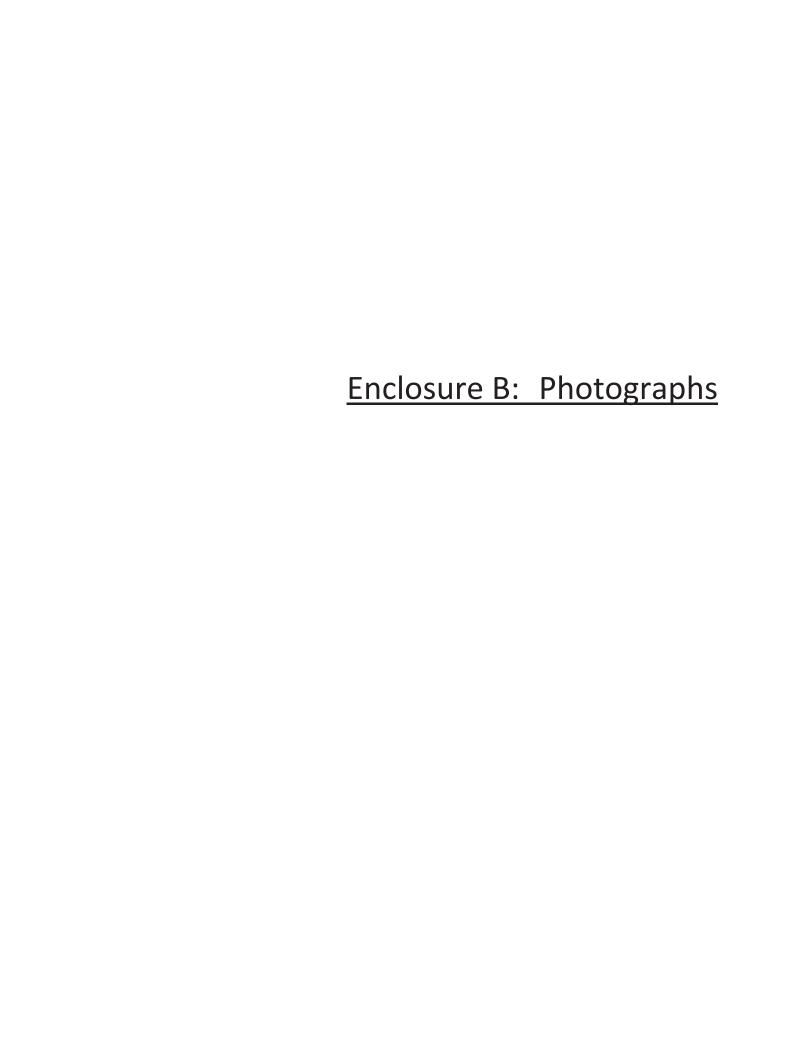














**Photograph 1:** View of the Emberclear Water Main S.R. 0010 project area, facing west (July 2016).



**Photograph 2:** View of the Emberclear Water Main S.R. 0010 project area, facing east (July 2016).



**Photograph 3:** View of the Emberclear Water Main S.R. 0010 project area, facing north (July 2016).



**Photograph 4:** View of the Emberclear Water Main S.R. 0010 project area, facing southeast (July 2016).



**Photograph 5:** View of the Emberclear Water Main S.R. 0724 project area, facing west (July 2016).



**Photograph 6:** View of the Emberclear Water Main S.R. 0724 project area, facing east (July 2016).



**Photograph 7:** View of the Emberclear Water Main S.R. 0724 project area, facing west (July 2016).



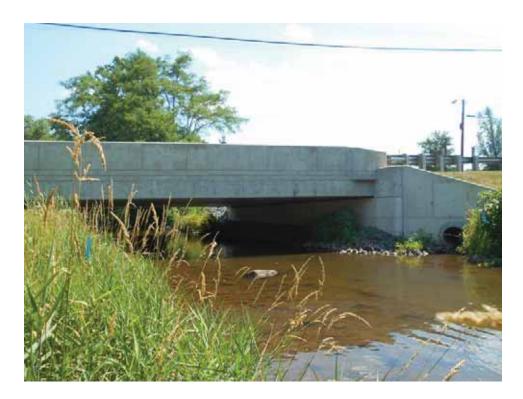
**Photograph 8:** View of the Emberclear Water Main S.R. 0724 project area, facing west (July 2016).).



**Photograph 9:** View of Wetland 1, facing northeast (July 2016).



**Photograph 10:** View of Wetland 2, facing northwest (July 2016).



**Photograph 11:** Upstream view of Waterway 2 (Hay Creek), facing southeast (July 2016).



**Photograph 12:** View of Wetland 3, facing southeast (July 2016).



**Photograph 13:** View of Wetland 4, facing southwest (July 2016).



**Photograph 14:** View of Wetland 5, facing northwest (July 2016).



**Photograph 15:** Downstream view of Waterway 1 (Angelica Creek), facing southeast (July 2016).



**Photograph 16:** Downstream view of Waterway 2 (Hay Creek), facing northwest (July 2016).



**Photograph 17:** Upstream view of Waterway 3 (UNT to the Schuylkill River), facing south (July 2016).



**Photograph 18:** Upstream view of Waterway 4 (UNT to the Schuylkill River), facing south (July 2016).



**Photograph 19:** Upstream view of Waterway 5 (UNT to the Schuylkill River), facing southeast (July 2016).



**Photograph 20:** Downstream view of Waterway 6 (UNT to the Schuylkill River), facing northeast (July 2016).



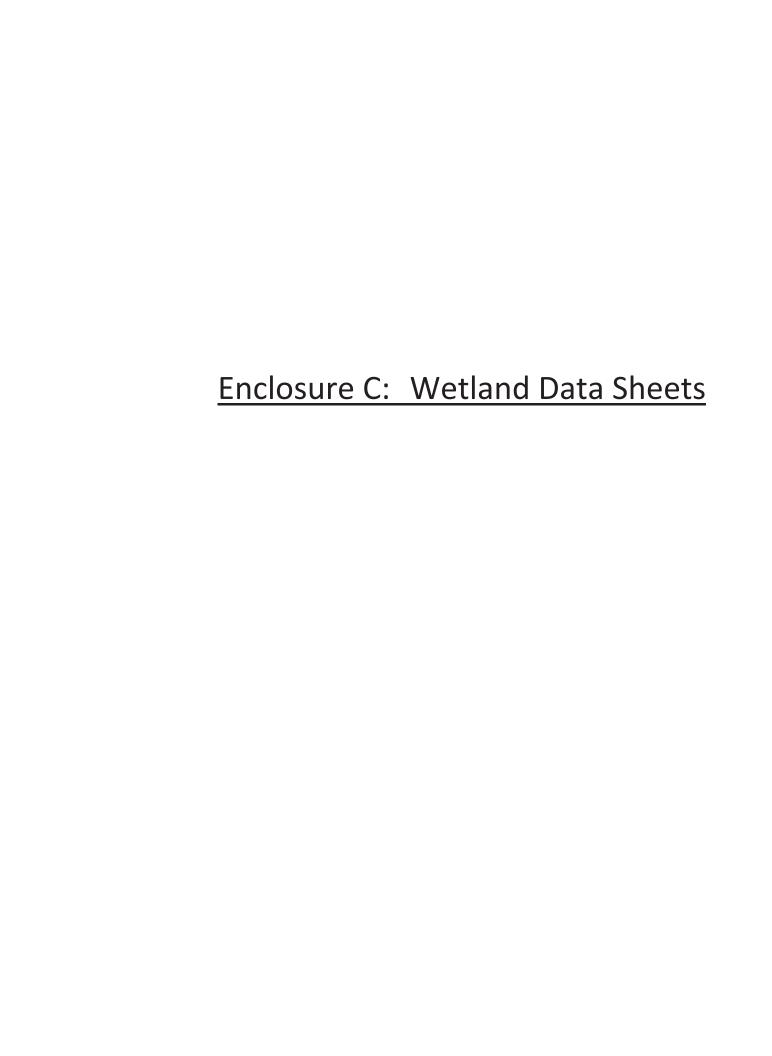
**Photograph 21:** Downstream view of Waterway 7 (UNT to the Schuylkill River), facing southeast (July 2016).



**Photograph 22:** Downstream view of Waterway 8 (UNT to the Schuylkill River), facing north (July 2016).



**Photograph 23:** Upstream view of Waterway 9 (UNT to Schuylkill River), facing east (July 2016).



Project/Site: Emberclear Water Main	City	/County: Readin		Sampling Date: <u>7/19/2016</u>
Applicant/Owner: Reading Water Authority				State: PA Sampling Point: UPL1
Investigator(s): CM, MM	£		Section	n, Township, Range:
Landform (hillslope, terrace, etc.): Subregion (LRR or MLRA)  MLA 148	terra	40.32271		Local relief:         flat         Slope (%):         0           Long:         -75.930525         Datum:         WGS 84
Soil Map Unit Name: Udorthents (Ua)	Lai.	40.32271		NWI classification: NA
<u> </u>				
Are climatic/hydrologic conditions on the site typical		-	Yes >	
Are Vegetation , Soil , or Hydrology _				ormal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology _	naturally	problematic?	(If need	ded, explain any answers in Remarks.)
VEGETATION Use Scientific Names of Plants				
VEGETATION COC COlonialio Namico del Tidrico	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	
1. Ailanthus altissima	80	Y	FACU	Number of Dominant Species
2. Prunus serotina	5	N	FACU	That Are OBL, FACW, or FAC:0(A)
3				Total Number of Dominant
4. <u></u>				Species Across All Strata: 6 (B)
6.				(E)
7.				Percent of Dominant Species
8				That Are OBL, FACW or FAC0 (A/B)
	<u>85</u> =	Total Cover		
				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15' )				Total % Cover of: Multiply by:
1. Lonicera maackii	70	Υ	NI	OBL Species 0 x 1 = 0
2.				FACW species 0 x 2 = 0
3.				FAC species 0 x 3 = 0
4				FACU species <u>160</u> x 4 = <u>640</u>
5				UPL species $0 \times 5 = 0$
6	70 -	Total Cover		Column Totals: <u>160 (A) 640 (B)</u> Prevalence Index = B/A = 4.00
		Total Cover		Prevalence index – B/A – 4.00
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1. Ailanthus altissima	5	Y	FACU	Rapid Test for Hydrophytic Vegetation
2				Dominance Test is >50%
3				Prevalence Index is ≤3.0 <sup>1</sup>
4 5		<del></del> -		Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on separate sheet)
6.				Problematic Hydrophytic Vegetation <sup>1</sup>
7.				(Explain)
8.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
9				be present, unless disturbed or problematic
10. 11.				Definitions of Vegetation Strata:
12.				Tree - Woody plants 3 in. (7.6 cm) or more in DBH,
13.				regardless of height.
	5 =	Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH
W. 1 V. 01 1 (Pt 1)				and greater than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size: 30' )	40	V	FAOU	<b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
Celastrus orbiculatus     Parthenocissus quinquefolia	<u>10</u> 5	<u>Y</u> Y	FACU FACU	Woody vines - All woody vines greater than 3.28 ft in
3. Muscadinia rotundifolia	5	<u> </u>	FACU	height
4.		<u> </u>		
	20 =	Total Cover		Hydrophytic Yes No X Vegetation Present?
				minated by leaf litter. Vegetation at UPL1 did not meet any le line between the Schuylkill River Trail and S.R. 0010.
or and right opiny and vegetation tests. Of LT was all up	ana point co		,5454 H 66	5 mile 25 moon and Condynan rayor trail and C.N. 0010.
				I

Profile Description: Describe to the depth needed to document the indicator or confirm the Depth Matrix Redox Features  (inches) Color (moist) % Color (moist) % Type¹ Loc²  0-4 7.5YR 2.5/1 100  1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sa Hydric Soil Indicators: Stripped Matrix (S6)  Histosol (A1) Dark Surface (S7)  Histic Epipedon (A2) Polyvalue Below Dark Surface (S8)  Black Histic (A3) Thin Dark Surface (S9) (MLRA 14: Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)  Stratified Layers (A5) Depleted Matrix (F3)  2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)  Depleted Below Dark Surface (A11) Depleted Dark Surface (F6)  Thick Dark Surface (A12) Redox Depressions (F8)  Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LF 147, 148) Umbric Surface (F13) (MLRA 136, Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (M Sandy Gleyed Matrix (S4) Red Parent Material (F21) (MLRA Restrictive Layer (if observed): Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY  Wetland Hydrology Indicators:  Primary indicators (minimum of one is required; check all that apply) Soil Surface (A11) Aquatic Flanta (B13) Saturation (A3) True Aquatic Flanta (B14) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Flanta (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Innundation Visible on Aerial Other (Explain in Remarks) Imagery (B7)	Texture silt loam  2 Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils 2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  2 RR N, MLRA 136) 122) 3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Depth (inches) Color (moist) % Color (moist) % Type¹ Loc²  0-4 7.5YR 2.5/1 100  Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sa Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) Histic Epipedon (A2) Polyvalue Below Dark Surface (S8) Black Histic (A3) Thin Dark Surface (S9) (MLRA 14: Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3)  2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) (LRR N, MLRA Umbric Surface (F13) (MLRA 136, Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (MLRA 147, 148) Umbric Surface (F13) (MLRA 136, Sandy Redox (S5) Red Parent Material (F21) (MLRA Restrictive Layer (if observed): Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY Wetland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Se Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Inundation Visible on Aerial Other (Explain in Remarks)	Texture silt loam  2 Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils 2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  2 RR N, MLRA 136) 122) 3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
(inches) Color (moist) % Color (moist) % Type¹ Loc²  O-4 7.5YR 2.5/1 100  Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sa Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) Histosol (A1) Dark Surface (S7) Histosol (A1) Dark Surface (S9) (MLRA 147) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LF 147, 148) Piedmont Floodplain Soils (F19) (M Sandy Redox (S5) Red Parent Material (F21) (MLRA Sandy Redox (S5) Red Parent Material (F21) (MLRA Restrictive Layer (if observed): Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY Wetland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Set Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Inundation Visible on Aerial Other (Explain in Remarks)	silt loam  2 Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils 2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136) 122) 3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sa Hydric Soil Indicators:     Histosol (A1)	silt loam  2 Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils 2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136) 122) 3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sa  Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Polyvalue Below Dark Surface (S8) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Peleted Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LF 147, 148) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA  Restrictive Layer (if observed): Type: gravel/rock Depth (inches): Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Inundation Visible on Aerial Other (Explain in Remarks)	Indicators for Problematic Hydric Soils 2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136) 122) 3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) Polyvalue Below Dark Surface (S8) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA H47, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Redox Depressions (F8) Fiedmont Floodplain Soils (F19) (NLRA 136, Sandy Redox (S5)  Redox Depressions (F8) Iron-Manganese Masses (F12) (LFA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Redox Dark Surface (F6)  Redox Dark Surface (F6)  Redox Dark Surface (F6)  Pepleted Dark Surface (F6)  Redox Dark Surface (F1)  Redox D	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (F6)  Redox Dark Surface (	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (F6)  Redox Dark Surface (	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LFA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 147, 148) Restrictive Layer (if observed): Type: Depth (inches):  A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (A1) A tes	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) Polyvalue Below Dark Surface (S8) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA H47, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA Restrictive Layer (if observed): Type: Depth (inches):  Remarks: Hydric soil indicators were not present.  Alternative Water Table (A2) Aquatic Fauna (B13) Aquatic Fauna (B13) Aquatic Fauna (B14) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Inn Dark Surface (S7) Inn Dark Surface (S9) MLRA 147 Record Depth (Matrix (F2)) Depleted Matrix (F2) Polepted Matrix (F2) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Predox Depleted Dark Surface (S9) Predox Depleted Dark Surface (F6) Predox Depleted Dark Surface (F6) Predox Depleted Dark Surface (F1)	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LFA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 147, 148) Restrictive Layer (if observed): Type: Depth (inches):  A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (A1) A tes	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (S9) (MLRA 147) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Iron-Manganese Masses (F12) (LFA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Red Parent Material (F21) (MLRA 147, 148) Restrictive Layer (if observed): Type: Depth (inches):  A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (if observed): A testrictive Layer (A1) A tes	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Thin Dark Surface (S9) (MLRA 14)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Matrix (F2)  Depleted Matrix (F3)  Polyvalue Below Dark Surface (S8)  Stratified Layers (A5)  Depleted Below Dark Surface (F6)  Depleted Below Dark Surface (F6)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR N, MLRA  147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Redox Depressions (F8)  Iron-Manganese Masses (F12) (LF Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (Normal Material (F21) (MLRA 136, Piedmont Fl	Indicators for Problematic Hydric Soils  2 cm Muck (A10) (MLRA 147, 148)  Coastal Prairie Redox (A16)  (MLRA 147,148)  Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Matrix (F2)  Depleted Matrix (F3)  Depleted Below Dark Surface (F6)  Depleted Below Dark Surface (F6)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR N, MLRA  147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Redox Depressions (F8)  Iron-Manganese Masses (F12) (LF  147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136,  Red Parent Material (F21) (MLRA 136,  Restrictive Layer (if observed):  Type: gravel/rock  Depth (inches):  A  Remarks: Hydric soil indicators were not present.  IYDROLOGY  Vetland Hydrology Indicators:  Primary indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  True Aquatic Fauna (B13)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Other (Explain in Remarks)	2 cm Muck (A10) (MLRA 147, 148) Coastal Prairie Redox (A16) (MLRA 147,148) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136) 122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Below Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA H47, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Redox Depressions (F8) Umbric Surface (F13) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA	Coastal Prairie Redox (A16) (MLRA 147,148)  Piedmont Floodplain Soils (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Black Histic (A3) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Loamy Gleyed Matrix (F3) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Loamy Gleyed Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Redox Depressions (F8) Loamy Gleyed Matrix (S4) Sandy Mucky Mineral (S1) (LRR N, MLRA Loamy Gleyed Dark Surface (F6) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Redox Depressions (F8) Liron-Manganese Masses (F12) (LF Umbric Surface (F13) (MLRA 136, Piedmont Floodplain Soils (F19) (NRA 136, Restrictive Layer (if observed): Type: gravel/rock Depth (inches):  Remarks: Hydric soil indicators were not present.  Remarks: Hydric soil indicators  Redox Dark Surface (F1)  Hydric Soil Presence (B9)  High Water Table (A2) Aquatic Fauna (B13)  Frue Aquatic Fauna (B13)  Frue Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils (C6)  Inundation Visible on Aerial  Other (Explain in Remarks)	(MLRA 147,148)  — Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  — Very Shallow Dark Surface (TF12)  — Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F2) Depleted Matrix (F3) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (F6) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA Iton-Manganese Masses (F12) (LF A147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Sandy Redox (S5)  Restrictive Layer (if observed): Type: gravel/rock Depth (inches):  Attendard Hydric soil indicators were not present.  Attendard Hydrology Indicators: Attendard Hydrology Indicators: Attendard Hydrology Indicators: Attendard Hydrology Indicators were not present.  Attendard Hydrology Indicators: Attendard Hydrology Indicators Attendard Hydrology	Piedmont Floodplain Soils  (F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Stratified Layers (A5)  2 cm Muck (A10) (LRR N)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR N, MLRA  147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Redox Depressions (F8)  Iron-Manganese Masses (F12) (LF 147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red	(F19) (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  RR N, MLRA 136)  122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Red Parent Material (F21) (MLRA  Restrictive Layer (if observed): Type: gravel/rock Depth (inches):  Remarks: Hydric soil indicators were not present.  IYDROLOGY Vetland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Iron-Manganese Masses (F6) Iron-Medox Surface (F6) Depleted Dark Surface (F1) Depleted Dark Surfac	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)  RR N, MLRA 136) 122)  3Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Redox Depressions (F8) Iron-Manganese Masses (F12) (LF Umbric Surface (F13) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont	Other (Explain in Remarks)  RR N, MLRA 136)  122)  ³Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Redox Depressions (F8) Iron-Manganese Masses (F12) (LF Umbric Surface (F13) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (N Red Parent Material (F21) (MLRA 136, Piedmont	Other (Explain in Remarks)  RR N, MLRA 136)  122)  ³Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA  147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5)  Red Parent Material (F21) (MLRA 136, Piedmont Floodplain Soils (F19) (MRA 136, Pi	122)  3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Sandy Mucky Mineral (S1) (LRR N, MLRA  147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Red Parent Material (F21) (MLRA  Restrictive Layer (if observed):  Type: gravel/rock Depth (inches):  Remarks: Hydric soil indicators were not present.  Remarks: Hydric soil Present leaves (B9)  Aquatic Fauna (B13)  Frue Aquatic Fauna (B13)  Frue Aquatic Flants (B14)  Water Marks (B1)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils (C6)  Iron Deposits (B5)  Thin Muck Surface (C7)  Other (Explain in Remarks)	122)  3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	122)  3 Indicators of hydrophytic vegetation at wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (Mark Sandy Redox (S5) Red Parent Material (F21) (Mark Restrictive Layer (if observed):  Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY  Wetland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Seriace Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Other (Explain in Remarks)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed): Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial  Red Parent Material (F21) (MLRA Hydric Soil Primary indicators (F21) Hydric Soil Primary indicators (Primary indicators were not present.  Hydric Soil Primary indicators (Primary indica	MLRA 148) wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):  Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY  Netland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Other (Explain in Remarks)	127, 147) unless disturbed or problematic.
Restrictive Layer (if observed):  Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  HYDROLOGY  Wetland Hydrology Indicators: Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Other (Explain in Remarks)	
Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  Remarks: Hydric soil indicators were not present.  RYDROLOGY  Vetland Hydrology Indicators: Drimary indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Inin Muck Surface (C7) Inundation Visible on Aerial  Hydric Soil Present.	esent? Yes <u>No X</u>
Type: gravel/rock Depth (inches): 4  Remarks: Hydric soil indicators were not present.  Primary indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial  Hydrogen Sulfide Odor (C7) Recent Iron Reduction in Tilled Soils (C6) Inon Deposits (B5) Inin Muck Surface (C7) Inundation Visible on Aerial  Hydric Soil Primary in Color Primary in Co	esent? Yes No _X_
Depth (inches): 4  Remarks: Hydric soil indicators were not present.	esent? Yes No <u>X</u>
Remarks: Hydric soil indicators were not present.  HYDROLOGY  Wetland Hydrology Indicators:  Primary indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  True Aquatic Fauna (B13)  Saturation (A3)  Water Marks (B1)  Hydrogen Sulfide Odor (C1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Thin Muck Surface (C7)  Inundation Visible on Aerial  Present.	
Wetland Hydrology Indicators:  Primary indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Wetland Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Inundation Visible on Aerial  Other (Explain in Remarks)	
HYDROLOGY  Wetland Hydrology Indicators:  Primary indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Wetland Hydrogen Sulfide Odor (C1)  Sediment Deposits (B3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	
Vetland Hydrology Indicators:         Primary indicators (minimum of one is required; check all that apply)       Set         Surface Water (A1)       Water-Stained Leaves (B9)         High Water Table (A2)       Aquatic Fauna (B13)         Saturation (A3)       True Aquatic Plants (B14)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)         Iron Deposits (B5)       Thin Muck Surface (C7)         Inundation Visible on Aerial       Other (Explain in Remarks)	
Primary indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Water Stained Leaves (B9)  Aquatic Fauna (B13)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	
Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Other (Explain in Remarks)	
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thin Muck Surface (C7) Other (Explain in Remarks)	econdary Indicators (minimum of two required)
Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	Surface Soil Cracks (B6) Shallow Aquitard (D3)
Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	Geomorphic Position (D2) Mircotopographic Relief (D
Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Other (Explain in Remarks)	Drainage Patterns (B10) FAC-Neutral Test (D5)
Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	Moss Trim Lines (B16)
Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)	Dry Season Water Table (C2)
Iron Deposits (B5) Inundation Visible on Aerial Thin Muck Surface (C7) Other (Explain in Remarks)	Crayfish Burrows (C8)
Inundation Visible on Aerial Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
<del></del>	Sparsely Vegetated Concave Surface (B8)
Field Observations:	
Surface Water Present? Yes No _X Depth (inches):	
Vater Table Present? Yes No _X Depth (inches):	Hydrology
Saturation Present? Yes No X Depth (inches):	Present? Yes No X
includes capillary fringe)	
Remarks: Wetland hydrology indicators were not present.	
Nomano: Woland Hydrology maiodioro word not procenti	
UMMARY OF FINDINGS Attach site map showing sampling point locations, tra	seaste important foatures atc.)
lydrophytic Vegetation present?  Yes  No X  Is the Samp	
Hydric Soils Present? Yes No X within a wet	
· · · · · · · · · · · · · · · · · · ·	le Area
<u></u> <u></u>	le Area land? Yes NoX
Pomorko: (Evoloin alternative procedures have as in a consert serious \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	le Area
	le Area land? Yes NoX al Wetland Site ID:
pland point collected within a wooded tree line between the Schuylkill River Tr	le Area land? Yes NoX al Wetland Site ID:  id not meet any of the wetland criteria. UPL1 was an

Project/Site: Emberclear Water Main Applicant/Owner: Reading Water Authority Investigator(s): CM, MM			State: PA Sampling Date: Sampling Point: , Township, Range:	
Landform (hillslope, terrace, etc.):	terrace		Local relief: flat	Slope (%): 0
		0.040005		
Subregion (LRR or MLRA) MLA 148	Lat: 4	0.312895	Long: -75.924288	Datum: WGS 84
Soil Map Unit Name: <u>Urban land=-Duffield co</u>	mplex, 0 to 8 percent slope	es (UmB)	NWI classification:	NA
Are climatic/hydrologic conditions on the site ty Are Vegetation, Soil, or Hydrologic Are Vegetation, Soil, or Hydrologic VEGETATION Use Scientific Names of Plant	ogysignificantly distu ogynaturally problem	rbed? Are "No	No (If no, explain in Represent?  Ided, explain any answers in Remark	Yes X No
TEGETATION COC COLORAINO NAMES OF FIGURE		ninant Indicator	Dominance Test worksheet:	
Trop Stratum (Diet size) 201			Dominance Test Worksheet.	
Tree Stratum (Plot size: 30'	_) % Cover Spe	cies? Status		
1			Number of Dominant Species	
2	<u> </u>		That Are OBL, FACW, or FAC:	<u> </u>
3				
4			Total Number of Dominant	
5			Species Across All Strata:	2 (B)
5 6.			openies / torese / tir etrata.	(3)
			Percent of Dominant Species	
7			That Are OBL, FACW or FAC	50 (A /D)
8			That Are OBL, FACW or FAC	(A/B)
	0 = Total Co	over		
			Prevalence Index worksheet:	<u>-</u>
Sapling/Shrub Stratum (Plot size: 15'	\			Multiply by:
				1 = 0
1				
2	<del></del>		FACW species 25 x	
3			FAC species 20 x	
4	<u> </u>		FACU species 50 x	4 = 200
5.			UPL species 5 x	5 = 25
6.			Column Totals: 100 (A)	335 (B)
· .	0 = Total Co	Wer	Prevalence Index = B/A =	
		ovei .	Trevalence index = B/A = _	3.33
Hards Otractions (Distraction 5)	,		Harden also the Manager to the dis-	-4
Herb Stratum (Plot size: 5'			Hydrophytic Vegetation India	
1. Lolium multiflorum		Y FACU	Rapid Test for Hydrophytic V	egetation
2. Agrostis gigantea	20	Y FACW	Dominance Test is >50%	
3. Trifolium pratense	15	N FACU	Prevalence Index is ≤3.0 <sup>1</sup>	
4. Aster sp.	15	N NA	Morphological Adaptations <sup>1</sup>	(Provide supporting
5. Verbascum thapsus	10	N FACU	data in Remarks or on separ	`
6. Barbarea vulgaris		N FACU	Problematic Hydrophytic Veg	
7. Daucus carota		N UPL	1 <del>-</del>	jetation
			(Explain)	
8. Echinochloa crus-galli	5	N FAC	<sup>1</sup> Indicators of hydric soil and w	
9	<del></del>		be present, unless disturbed or	
10			Definitions of Vegetation Stra	ata:
11				
12.			Tree - Woody plants 3 in. (7.6	cm) or more in DBH,
13.			regardless of height.	
	95 = Total Co	over	Sapling/shrub - Woody plants	less than 3 in. DBH
			and greater than 3.28 ft (1m) ta	
Woody Vine Stratum (Plot size: 30'	١		<b>Herb</b> - All herbaceous (non-wo	
	_'		of size, and woody plants less	
1	<del></del>		* '	
2			Woody vines - All woody vines	s greater than 3.28 ft in
3.			height	
4			Llygluo mbyskie	
	0 = Total Co	over	Hydrophytic Yes	No X
			Vegetation Present?	
Remarks: (Include photo numbers here or on se	enarate sheet ) Venetation	at LIPI 2 did not m	eet any of the hydrophytic vegetation	in tests TIPL 2 was an
upland point collected adjacent to S.R. 0010 an		i at Oi LZ uiù HUl III	cot any or the hydrophytic vegetation	III IGOIO. UF LZ WAS AII
apiana point conected adjacent to 5.K. 0010 an	u a raiiiudu.			
1				

Profile Descri								5		
20001	ption: Describe to t	he denth	needed to	documen	nt the indic	ator or confi	rm the ahs	ence of indicators	)	
Donth	-	սշբն	. nosueu (C				aus	once of mulcators.	,	
Depth	Matrix				dox Featu		. 2			
(inches)	Color (moist)	%	Color (r	moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-3	7.5YR 3/2	100						silt loam		
Type: C=Co	ncentration, D=De	nletion I	RM=Reduc	ced Matrix	CS=Cov	ered or Coa	ted Sand	Grains <sup>2</sup> I	ocation: PI =	Pore Lining, M=Matrix.
		piction, i	T T T T T T T T T T T T T T T T T T T				itoa oana			
Hydric Soil I			_		ed Matrix (	. ,		II.		Problematic Hydric Soils
Histosol	(A1)			Dark S	Surface (S	7)		_	2 cm Mucl	(A10) <b>(MLRA 147, 148)</b>
Histic Ep	ipedon (A2)			Polyva	alue Below	/ Dark Surfa	ce (S8) (N	ILRA 147, 148)	Coastal Pr	airie Redox (A16)
Black His	stic (A3)			Thin D	Oark Surfac	ce (S9) (ML	RA 147. 1	48)	(MLRA 14	, ,
	n Sulfide (A4)		_		y Gleyed N		,	- /	•	Floodplain Soils
			_		-			-		•
	Layers (A5)		_		ted Matrix					RA 136, 147)
2 cm Mu	ck (A10) (LRR N)			Redox	c Dark Sur	face (F6)		_		ow Dark Surface (TF12)
Depleted	Below Dark Surfa	ce (A11)	)	Deplet	ted Dark S	Surface (F6)			Other (Exp	olain in Remarks)
Thick Da	rk Surface (A12)			Redox	c Depressi	ons (F8)		_		
	ucky Mineral (S1)	/I DD N	MI DA				12) /I PD	N, MLRA 136)		
		(LIXIX IV,	MILIVA _						2	
147, 148	,		_			(F13) (MLR		•		f hydrophytic vegetation a
Sandy G	leyed Matrix (S4)			Piedm	nont Flood	plain Soils (l	F19) (MLR	A 148)	wetland hydr	ology must be present,
Sandy R	edox (S5)			Red P	arent Mate	erial (F21) (	MLRA 127	7, 147)	unless distur	bed or problematic.
								•		
Postrictivo I	ayer (if observed	1).								
_	• .	· .				1				
Type:		ock				Hydric	Soil Prese	ent? Yes _	No X	_
Depth (in	ches):	3								
Remarks: H	ydric soil indicators	were no	nt nresent							
HYDROLOG	Y									
		S:								
Wetland Hyd	drology Indicators		eanired: ch	neck all th	at annly)		Seco	ndary Indicators (r	ninimum of two	required)
<b>Wetland Hyd</b> Primary indic	drology Indicators ators (minimum of	one is re						ndary Indicators (r		
Wetland Hyd Primary indic Surface \	drology Indicators ators (minimum of Water (A1)	one is re	Water-Stai	ned Leave	es (B9)		Su	rface Soil Cracks (	B6) S	Shallow Aquitard (D3)
Wetland Hyd Primary indic Surface \	drology Indicators ators (minimum of	one is re		ned Leave	es (B9)		Su	•	B6) S	
Wetland Hyd Primary indic Surface \	drology Indicators ators (minimum of Water (A1) ter Table (A2)	one is re	Water-Stai Aquatic Fa	ned Leave una (B13)	es (B9) )		Su Ge	rface Soil Cracks (	B6) _ S (D2) _ N	Shallow Aquitard (D3) Microtopographic Relief (D
Wetland Hyd Primary indic Surface V High Wa Saturatio	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3)	one is re	Water-Stai Aquatic Fa True Aquat	ned Leave una (B13) tic Plants	es (B9) ) (B14)		Su Ge Dra	rface Soil Cracks ( comorphic Position ainage Patterns (B	B6)S (D2)N 10)F	Shallow Aquitard (D3)
Wetland Hyd Primary indic Surface \ High Wa Saturatic Water Mi	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1)	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S	ned Leave una (B13) tic Plants Sulfide Oc	es (B9) ) (B14) dor (C1)	ng Poets (C	Su Ge Dra Mo	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1)	B6)S (D2)N 10)F	Shallow Aquitard (D3) Microtopographic Relief (D
Wetland Hyd Primary indic Surface V High Wa Saturatio Water Ma	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R	ned Leave una (B13) tic Plants Sulfide Oc hizosphei	es (B9) ) (B14) dor (C1) res on Livi	ng Roots (C	Su Ge Dra Mc	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1) y Season Water Ta	B6)S (D2)N 10)F 6) able (C2)	Shallow Aquitard (D3) Microtopographic Relief (D
Wetland Hyd Primary indic Surface \ High Wa Saturatio Water Mi Sedimen Drift Dep	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	one is ro	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence c	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4	)	Su Ge Dra Mo Cra	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1) y Season Water Ta ayfish Burrows (C8	B6)	Shallow Aquitard (D3) Microtopographic Relief (D FAC-Neutral Test (D5)
Wetland Hyd Primary indic Surface \ High Wa Saturatio Water Mi Sedimen Drift Dep	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)	one is ro	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence c	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4	•	Su Ge Dra Mo Cra	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1) y Season Water Ta	B6)	Shallow Aquitard (D3) Microtopographic Relief (D FAC-Neutral Test (D5)
Wetland Hyd Primary indic Surface \( \) High Wa' Saturatio Water Mater	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	one is re	Water-Stail Aquatic Fa Frue Aquati Hydrogen S Oxidized R Presence of Recent Iron	ned Leave una (B13) tic Plants Sulfide Oc hizosphel of Reduce n Reduction	es (B9) ) (B14) dor (C1) res on Livi ed Iron (C4 on in Tilled	)	Su Su Sr. Sa	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on	B6) (D2) N 10) F 6) able (C2) 8) Aerial Imagery	Shallow Aquitard (D3) Microtopographic Relief (D FAC-Neutral Test (D5)
Wetland Hyderimary indice Surface Verified High Waren Maren Maren Maren Maren Drift Deperation Algal Maler Iron Deperations in the Sedimen Drift Deperation Deperations in the Sedimen Drift Deperation Deperations in the Sedimen Drift Deperations in the Sediment Drift	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	one is re	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	)	Su Su Sti	rface Soil Cracks (comorphic Position ainage Patterns (Boss Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1)	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyderimary indice Surface Note High Ware Marer	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial	one is re	Water-Stail Aquatic Fa Frue Aquati Hydrogen S Oxidized R Presence of Recent Iron	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	)	Su Su Sti	rface Soil Cracks ( comorphic Position ainage Patterns (B oss Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1)	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyde Primary indice Surface Notes High Was Saturation Water Massedimen Drift Dep Algal Massed Iron Dep Inundation	drology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7)	one is re	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	)	Su Su Sti	rface Soil Cracks (comorphic Position ainage Patterns (Boss Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1)	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyd Primary indic Surface \( \) High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Imagery	drology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations:	one is re	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)	) I Soils (C6)	Su Su Sti	rface Soil Cracks (comorphic Position ainage Patterns (Boss Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1)	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyde Primary indice Surface New High War Saturation Water Mar Sedimen Drift Dep Algal Mar Iron Dep	drology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations:	one is re	Water-Stail Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	ned Leave una (B13) tic Plants Sulfide Oc thizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	) I Soils (C6)	Su Su Sti	rface Soil Cracks (comorphic Position ainage Patterns (Boss Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1)	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyd Primary indic Surface \( \) High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Imagery	drology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present?	one is re	Water-Stain Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	) I Soils (C6) es):	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed (arsely Vegetated (	B6)S (D2)N 10)F 6) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyder Primary indices Surface Mater Mate	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial (B7) vations: er Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher of Reduce on Reductic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Petland Hyderimary indices Surface Margary High Ware Margary Sedimen Drift Dep Algal Margary Iron Dep Inundation Imagery Field Observ Surface Water Table Saturation Primagery	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) it Deposits (B2) osits (B3) it or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present?	one is re	Water-Stai Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher of Reduce on Reductic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed (arsely Vegetated (	B6)S (D2)N 10)F 6) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)
Wetland Hyderimary indices Surface Market Ma	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) to Deposits (B2) osits (B3) to r Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher n Reducetic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Primary indices Surface Notes and the second	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) it Deposits (B2) osits (B3) it or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher n Reducetic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Wetland Hyderimary indices Surface Market Ma	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) to Deposits (B2) osits (B3) to r Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher n Reducetic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Petland Hyderimary indices Surface Mater Table Saturation Princludes capaging Mater	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) to Deposits (B2) osits (B3) to r Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher n Reducetic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Petland Hyderimary indices Surface Mater Table Saturation Princludes capaging Mater	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) to Deposits (B2) osits (B3) to r Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	one is re	Water-Stai Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc thizospher n Reducetic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche	)   Soils (C6)	Su Su Sti	rface Soil Cracks ( ecomorphic Position ainage Patterns (B ess Trim Lines (B1) y Season Water Ta ayfish Burrows (C8 turation Visible on unted or Stressed I arsely Vegetated (  Hydrology	B6)S (D2)N 10)F 6) 3) Able (C2) 5) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Wetland Hyderimary indice Surface Note High Waren Maren Mare	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? esent? vesent?	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No No	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche	)	Su S	rface Soil Cracks (somorphic Position ainage Patterns (Bluss Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed arsely Vegetated (C8)  Hydrology Present?	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Wetland Hyderimary indices Surface Note High Waren Maren Mar	drology Indicators ators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? esent? Overland hydrologo DF FINDINGS A	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No No	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche	es): es): es):	Su Gee Mc Si	rface Soil Cracks (somorphic Position ainage Patterns (Bass Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed arsely Vegetated (C8) Present?	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Wetland Hyderimary indices Surface Note High Waren Maren Mar	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? esent? vesent?	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No No	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche	es): es): es):	Su S	rface Soil Cracks (somorphic Position ainage Patterns (Bass Trim Lines (B1) y Season Water Tayfish Burrows (C8) turation Visible on unted or Stressed arsely Vegetated (C8) Present?	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  (C9)
Wetland Hyd Primary indic Surface N High Wa' Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Water Water Table Saturation Profincludes cap Remarks: N	drology Indicators ators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? esent? Overland hydrologo DF FINDINGS Ar Vegetation present	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No ators were	ned Leave una (B13) tic Plants Sulfide Oc thizospher of Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche	es): es): es): eshicition	Su S	rface Soil Cracks (somorphic Position ainage Patterns (Bluss Trim Lines (B1) y Season Water Taylish Burrows (C8) turation Visible on unted or Stressed arsely Vegetated (C8) Present?	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D FAC-Neutral Test (D5)  (C9)  Ce (B8)  No X
Wetland Hyderimary indices Surface Median Saturation Water Median Sedimen Drift Dep Algal Ma Iron Dep Inundation Imagery Field Obsert Surface Water Water Table Saturation Profices Generation Profices Remarks: Median Sedimen Remarks: Median Sedime	drology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? oillary fringe) Vetland hydrologo DF FINDINGS A Vegetation present?	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquatic Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No ators were  te map sh Yes Yes Yes	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface (clain in Re  X Do X Do e not pre  owing sa No No	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche sent.	oint locatio	Su S	rface Soil Cracks (somorphic Position ainage Patterns (Bluss Trim Lines (B1) y Season Water Taylish Burrows (Caturation Visible on unted or Stressed arsely Vegetated (Cate Present?  Hydrology Present?  Area d? Yes	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3) Microtopographic Relief (D FAC-Neutral Test (D5)  (C9)  Ce (B8)  No X
Wetland Hyderimary indices Surface Median Saturation Water Median Sedimen Drift Dep Algal Ma Iron Dep Inundation Imagery Field Obsert Surface Water Water Table Saturation Profices Generation Profices Remarks: Median Sedimen Remarks: Median Sedime	drology Indicators ators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? esent? Overland hydrologo DF FINDINGS Ar Vegetation present	Yes Yes Yes Gy indica	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No ators were  te map sh Yes	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re  X X Do e not pre	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche	oint locatio	Su S	rface Soil Cracks (somorphic Position ainage Patterns (Bluss Trim Lines (B1) y Season Water Taylish Burrows (C8) turation Visible on unted or Stressed arsely Vegetated (C8) Present?	B6)S (D2)N 10)F 6) able (C2) 8) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D FAC-Neutral Test (D5)  (C9)  Ce (B8)  No X
Wetland Hyd Primary indic Surface \( \) High Wa Saturatio Water Magery Algal Ma Iron Dep Inundatio Imagery Field Obsert Surface Water Table Saturation Proposition of the company of the c	drology Indicators actors (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? vesent? olillary fringe) Netland hydrolog  DF FINDINGS Avegetation present Present? rology Present?	Yes	Water-Stain Aquatic Fa Aquatic Fa Frue Aquatic Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No ators were  te map sh Yes Yes Yes Yes	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re  X X Do X Do e not pre  owing sa No No No	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche xsent.	oint location ls the within lf yes	Su Su Stanse Sample An a wetland, optional N	rface Soil Cracks (somorphic Position ainage Patterns (Bass Trim Lines (B1) y Season Water Tay (Season Water Season Water Tay (Season Water Season	B6)S (D2)N 10)F 6) able (C2) s) Aerial Imagery Plants (D1) Concave Surface Yes	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  No X  No X
Wetland Hyd Primary indic Surface \( \) High Wa Saturatio Water Magery Algal Ma Iron Dep Inundatio Imagery Field Obsert Surface Water Table Saturation Proposition of the company of the c	drology Indicators actors (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? vesent? olillary fringe) Netland hydrolog  DF FINDINGS Avegetation present Present? rology Present?	Yes	Water-Stain Aquatic Fa Aquatic Fa Frue Aquatic Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No ators were  te map sh Yes Yes Yes Yes	ned Leave una (B13) tic Plants Sulfide Oc chizospher of Reduce n Reductic Surface ( lain in Re  X X Do X Do e not pre  owing sa No No No	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche xsent.	oint location ls the within lf yes	Su Su Stanse Sample An a wetland, optional N	rface Soil Cracks (somorphic Position ainage Patterns (Bass Trim Lines (B1) y Season Water Tay (Season Water Season Water Tay (Season Water Season	B6)S (D2)N 10)F 6) able (C2) s) Aerial Imagery Plants (D1) Concave Surface Yes	Shallow Aquitard (D3)  Microtopographic Relief (D FAC-Neutral Test (D5)  (C9)  Ce (B8)  No X
Wetland Hyd Primary indic Surface N High Wa Saturatio Water Mai Sedimen Drift Dep Algal Ma Iron Dep Inundatio Imagery Field Observ Surface Water Table Saturation Princludes cap Remarks: N  SUMMARY ( Hydrophytic N Hydric Soils   Wetland Hyd	drology Indicators actors (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? vesent? olillary fringe) Netland hydrolog  DF FINDINGS Av Vegetation present Present? rology Present?	Yes	Water-Stain Aquatic Fa Frue Aquatic Hydrogen S Oxidized R Presence of Recent Iron Thin Muck Other (Exp  No No No Rators were  te map sh Yes Yes Yes Yes Hedures he	ned Leave una (B13) tic Plants Sulfide Oc thizospher of Reduce n Reductic Surface (Iain in Re  X Do X Do e not pre  owing sa No No No re or in a	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche x x x x x a separate	oint location ls the within lf yes	Su Su Stanse Sample An a wetland, optional N	rface Soil Cracks (somorphic Position ainage Patterns (Bass Trim Lines (B1) y Season Water Tay (Season Water Season Water Tay (Season Water Season	B6)S (D2)N 10)F 6) able (C2) s) Aerial Imagery Plants (D1) Concave Surface Yes	Shallow Aquitard (D3) Microtopographic Relief (DFAC-Neutral Test (D5)  (C9)  No X  No X

Project/Site: Emberclear Water Main Applicant/Owner: Reading Water Authority	City	y/County: Birdsb	S	Sampling Date: 7/19/2016 Sampling Point: W1
Investigator(s): CM, MM			Section,	Township, Range:
Landform (hillslope, terrace, etc.):		ession		Local relief: concave Slope (%): 0
Subregion (LRR or MLRA) MLRA 148	Lat	: 40.2675	L	.ong:75.804716
Soil Map Unit Name: Udorthents (Ua)				NWI classification:
Are climatic/hydrologic conditions on the site typical fare Vegetation, Soil, or Hydrology	significa	intly disturbed?	Are "Nor	No (If no, explain in Remarks.) rmal Circumstances" present? Yes X No ed, explain any answers in Remarks.)
<b>VEGETATION</b> Use Scientific Names of Plants				
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	
1				Number of Dominant Species
2				That Are OBL, FACW, or FAC: 3 (A)
3.				
4.				Total Number of Dominant
5.				Species Across All Strata: 5 (B)
^				(
7				Percent of Dominant Species
7				
8		T + + 0		That Are OBL, FACW or FAC 0.6 (A/B)
	=	Total Cover		
				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')				Total % Cover of: Multiply by:
1. Rosa multiflora	10	Y	FACU	OBL Species $0 \times 1 = 0$
2.				FACW species 25 x 2 = 50
3				FAC species $10 \times 3 = 30$
3				
4				<u> </u>
5				UPL species 0 x 5 = 0
6				Column Totals: <u>55</u> (A) <u>160</u> (B)
	10 =	Total Cover		Prevalence Index = B/A = 2.91
Herb Stratum (Plot size: 5' )				Hydrophytic Vegetation Indicators:
1. Phragmites australis	20	Υ	FACW	Rapid Test for Hydrophytic Vegetation
2. Lythrum salicaria	5	Y	FACW	X Dominance Test is >50%
3.				X Prevalence Index is ≤3.0 <sup>1</sup>
4				Morphological Adaptations <sup>1</sup> (Provide supporting
5.				data in Remarks or on separate sheet)
^				· · · · · · · · · · · · · · · · · · ·
6				Problematic Hydrophytic Vegetation <sup>1</sup>
7				(Explain)
8				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
9				be present, unless disturbed or problematic
10				Definitions of Vegetation Strata:
11				
12.		<u> </u>		Tree - Woody plants 3 in. (7.6 cm) or more in DBH,
13.				regardless of height.
	25 =	Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH
				and greater than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size: 30')				Herb - All herbaceous (non-woody) plants, regardless
1. Toxicodendron radicans	10	Υ	FAC	of size, and woody plants less than 3.28 ft tall
	10	<u> </u>		
2. Muscadine rotundifolia	10	<u> </u>	FACU	Woody vines - All woody vines greater than 3.28 ft in
3				height
4				Hydrophytic
	20 =	Total Cover		Vegetation Present?
Remarks: (Include photo numbers here or on separa	te sheet.) V	egetation was pre	sent surrou	nding an area of open water. Hydrophytic vegetation was
based on the dominance and prevalence index tests.				

SOIL								Sampling Point:	W1
Profile Desc	ription: Describe to t	he depth	needed to docu	ıment the indi	cator or co	onfirm the a	bsence of indicator	·s.)	
Depth	Matrix	•		Redox Feat				,	
(inches)	Color (moist)	%	Color (moist		Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
(1101100)	Ocioi (moiot)	70	00101 (1110101		Турс		TOXIGIO	_	rtomanto
	-							_	
								_	
							-		
								_	
4								2	
'Type: C=C	oncentration, D=De	pletion, F	RM=Reduced M	latrix, CS=Co	vered or C	Coated Sar	nd Grains.		ore Lining, M=Matrix.
Hydric Soil	Indicators:		S	tripped Matrix	(S6)			Indicators for Pro	blematic Hydric Soils <sup>3</sup>
Histoso	(A1)		D	ark Surface (	S7)			2 cm Muck (A	A10) <b>(MLRA 147, 148)</b>
Histic E	pipedon (A2)		P	olyvalue Belo	w Dark Su	ırface (S8)	(MLRA 147, 148)	Coastal Prair	ie Redox (A16)
Black H	istic (A3)		TI	hin Dark Surfa	ace (S9) (I	<b>MLRA 147</b>	', 148)	(MLRA 147,	148)
Hydroge	en Sulfide (A4)		Lo	oamy Gleyed	Matrix (F2	2)		Piedmont Flo	odplain Soils
	d Layers (A5)			epleted Matri		•		(F19) <b>(MLRA</b>	•
	uck (A10) (LRR N)			edox Dark Su		)			Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)		epleted Dark					n in Remarks)
	ark Surface (A12)	( ,		edox Depress		-,			,
	Mucky Mineral (S1)	/I RR N			, ,	(F12) (I R	R N, MLRA 136)		
3andy 1	. ,	\ iv,		mbric Surface			· · · · · · · · · · · · · · · · · · ·	31001110	ideaphytic
	Gleyed Matrix (S4)			iedmont Floor			-		ydrophytic vegetation and
									ogy must be present,
	Redox (S5)		R	ed Parent Ma	iteriai (FZ i	(IVILKA	127, 147)	uniess disturbe	d or problematic.
Da a fail a filoso	1 (!f - h	N -			1				
_	Layer (if observed	1):			l				
Type:					Hydr	ic Soil Pre	esent? Yes	<u> </u>	
Depth (i	nches):								
									on and hydrological
HYDROLO(	GY								
Wetland Hy	drology Indicators	s:							
Primary indi	cators (minimum of	one is re	equired; check a	all that apply)		Se	condary Indicators	(minimum of two re	quired)
X Surface	Water (A1)	V	Vater-Stained L	eaves (B9)			Surface Soil Crack	s (B6) Sha	allow Aquitard (D3)
X High Wa	ater Table (A2)	A	quatic Fauna (	B13)			Geomorphic Position	on (D2) $\overline{X}$ Mic	rotopographic Relief (D4)
X Saturati	on (A3)	—т	rue Aquatic Pla	ants (B14)			Drainage Patterns	(B10) FA	C-Neutral Test (D5)
Water N	larks (B1)		lydrogen Sulfid			_	Moss Trim Lines (E	316)	, ,
	nt Deposits (B2)		xidized Rhizos		ving Roots		Dry Season Water		
	posits (B3)		resence of Red		-		Crayfish Burrows (		
	at or Crust (B4)		Recent Iron Red					on Aerial Imagery (0	:9)
	posits (B5)		hin Muck Surfa		, a 00110 (0	_	Stunted or Stresse		,0)
	ion Visible on Aerial		Other (Explain in					d Concave Surface	(B8)
Imagery		`	otror (Explain ii	r (ciriarito)			oparoory vogetates	a concave canace	(50)
Field Obse									
	ter Present?	Voc	Y No	Donth (incl	noc).	1.1			
		_	X No	Depth (incl	· -	14			
Water Table			X No	Depth (incl	_	0	Hydrolog	• •	NI-
Saturation F		Yes _	X No	Depth (incl	nes):	0	Present	? Yes <u>X</u>	No
	pillary fringe)								0 1 7 0 1:
	tch with no inlet o		-	sent. Fourte	en inche	s of surfa	ce water were pr	esent within the w	vetland. The wetland is
SUMMARY	OF FINDINGS A	ttach sit	e map showin	g sampling r	point loca	tions. tran	nsects. important	features, etc.)	
	Vegetation present			No		the Sampl		,,	
Hydric Soils		-		No		thin a wet		X N	0
•	drology Present?			No			al Wetland Site ID:		<u> </u>
vvouanu my	arology i lesell!		103 <u>A</u>		пу	os, optioni	ai vvoliana Sile ID.		
Pamarka	(Evolain alternation	o proce	dures hara ar	in a conoro	to roport	) \//1 mo+	three out of three	e wetland critoria	A soil sample was
									A soil sample was
									gical indicators present
within the	sample point, it is	assume	ea tnat soils a	tnis point a	re also h	yarıc. W1	was the represe	ntative data point	for Wetland 1. Wetland

Project/Site: Emberclear Water Main Applicant/Owner: Reading Water Auth Investigator(s): CM, MM		City/County:	Birdsboro/Berks Sectio	State: PA Sampling Date: State: PA Sampling Point: n, Township, Range:	
Landform (hillslope, terrace, etc.):		terrace		Local relief: flat	Slope (%): 0
Subregion (LRR or MLRA) ML			267412	Long: -75.804751	Datum: WGS 84
Soil Map Unit Name: Udorthents (Ua)				NWI classification:	
Are climatic/hydrologic conditions on the Are Vegetation X , Soil , or H	lydrologysigni lydrologynatu	ficantly disturbe	ed? Are "N	XNo (If no, explain in Ro lormal Circumstances" present? ded, explain any answers in Remark	Yes X No
VEGETATION Use Scientific Names of		to Domin	ant Indiaatam	Deminance Test weeksheet	
Troe Stratum (Plot aize: 20)	Absolu			Dominance Test worksheet:	
Tree Stratum (Plot size: 30'	) % Cov	er Specie	es? Status	Number of Deminent Species	
1				Number of Dominant Species	. 0 (1)
2.				That Are OBL, FACW, or FAC	<u> </u>
3				. Total Novel and of Danis and	
4				Total Number of Dominant	4 (D)
5				Species Across All Strata:	1(B)
6				- Demonstrat Demoissant Consider	
7				Percent of Dominant Species	0 (4 (5)
8				That Are OBL, FACW or FAC	0 (A/B)
	0	= Total Cove	er		
					_
				Prevalence Index worksheet	<u>:</u>
Sapling/Shrub Stratum (Plot size:	15' )				Multiply by:
1. Lonicera maackii	5	Y	FACU		1 =0
2				FACW species x	2 = 0
3		_		FAC species x	3 =0
4				FACU species 82 x	4 = 328
5.				UPL species x	5 = 0
6.				Column Totals: 82 (A)	328 (B)
	5	= Total Cove	er —	Prevalence Index = B/A =	
		_		_	
Herb Stratum (Plot size: 5'	)			Hydrophytic Vegetation Indi	cators:
1. Poa pratensis	100	Υ	FACU	Rapid Test for Hydrophytic \	· · · · · · · · · · · · · · · · · · ·
2. Plantago major	5	N	FACU	Dominance Test is >50%	
3. Trifolium pratense	5	N	FACU	Prevalence Index is ≤3.0 <sup>1</sup>	
4.				Morphological Adaptations <sup>1</sup>	(Provide supporting
5.				data in Remarks or on separ	, , , , , , , , ,
6.				Problematic Hydrophytic Ve	4 '
7.				(Explain)	gotation
0				<sup>1</sup> Indicators of hydric soil and w	etland hydrology must
9.	<del></del>			be present, unless disturbed or	
10.		_		Definitions of Vegetation Str	
11		_	<u> </u>		
12.				Tree - Woody plants 3 in. (7.6	cm) or more in DBH.
13.		_		regardless of height.	,
-	110	= Total Cove	 er	Sapling/shrub - Woody plants	s less than 3 in. DBH
				and greater than 3.28 ft (1m) to	
Woody Vine Stratum (Plot size:	30' )			Herb - All herbaceous (non-wo	
1. Muscadinia rotundifolia	) 5	Υ	FACU	of size, and woody plants less	371
			FACU	Woody vines - All woody vine	
		_		height	o greater triair J.20 It III
3		_		- Indignit	
4	5	= Total Cove	er	Hydrophytic Yes Vegetation Present?	NoX
Remarks: (Include photo numbers here o	r on separate sheet	) Area where	sample point w	as taken is routinely mowed. Vegeta	tion at W1 UPL did not
meet any of the hydrophytic vegetation to		, ,ca wilele	campic point w	as taken is reduitely mower. vegete	MON GE VE I OF E GIG HOL
I sold the second secon					

SOIL								`	Sampling Point:	W1 U	
Profile Descr	iption: Describe to t	the denth	needed to	documen	t the indic	ator or con	firm the ah	sence of indicators	)	<u> </u>	
Depth	Matrix	ino dopin			dox Featu				,		
	i e	0/	0-1 (-				12	Tt		Damada	
(inches)	Color (moist)	%	Color (r	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-2	7.5YR 3/3	100						loam			
2-5	7.5YR 4/3	100						loam			
						·	<u> </u>				
									-		
Typo: C=Cc	ncentration, D=De	nlotion [	DM-Doduc	and Matrix	, CS=Cov	orod or Co	natad Sand	Grains 2	ocation: DI -	Pore Lining, M=	Matrix
		pietion, i	NIVI-INEGUC				Jaleu Saliu				
-	Indicators:		_		ed Matrix	` '		ı		Problematic Hydr	
Histosol	` '		_		Surface (S				2 cm Mucl	< (A10) (MLRA 14	7, 148)
Histic Ep	ipedon (A2)		_	Polyva	alue Belov	v Dark Sur	face (S8) <b>(</b> I	MLRA 147, 148)	Coastal Pı	rairie Redox (A16)	
Black Hi	stic (A3)			Thin D	ark Surfa	ce (S9) (M	ILRA 147,	148)	(MLRA 14	47,148)	
Hydroge	n Sulfide (A4)			Loamy	Gleyed N	Matrix (F2)			Piedmont	Floodplain Soils	
	Layers (A5)				ted Matrix			•		RA 136, 147)	
	ck (A10) (LRR N)		_		Dark Sur					ow Dark Surface (	TF12)
	Below Dark Surfa	co (A11)	_			Surface (F6	3)	•		olain in Remarks)	11 12)
		ce (ATT)	_				)		Other (EX	nam m Kemarks)	
	rk Surface (A12)				Depressi						
	lucky Mineral (S1)	(LRR N,	MLRA _					N, MLRA 136)			
147, 148	,			Umbri	c Surface	(F13) <b>(ML</b>	RA 136, 12	22)	<sup>3</sup> Indicators o	f hydrophytic vege	tation an
Sandy G	leyed Matrix (S4)			Piedm	ont Flood	plain Soils	(F19) (MLI	RA 148)	wetland hydr	ology must be pre	sent,
 Sandy R	edox (S5)			Red P	arent Mat	erial (F21)	(MLRA 12	7, 147)		bed or problemation	
	, ,					, ,	•	•		•	
Restrictive	Layer (if observed	1):									
Type:	-	ock				Hydric	Soil Pres	ent? Yes	No X		
		5		_		liyund	, Jon Fies	ciit: 165	NO	-	
Depth (ir	iches).	<u> </u>									
	dric soil indicators										
HYDROLOG											
Vetland Hy	drology Indicators										
Vetland Hy			equired; ch	neck all th	at apply)		Seco	ondary Indicators (i	ninimum of two	required)	
<b>Vetland Hy</b> Primary indic	drology Indicators	one is re	equired; ch Water-Staiı					•		<u> </u>	
<b>Vetland Hy</b> Primary indice Surface	drology Indicators cators (minimum of Water (A1)	one is re	Nater-Stai	ned Leave	es (B9)		S	urface Soil Cracks	(B6)	Shallow Aquitard (I	
Vetland Hy Primary indio Surface High Wa	drology Indicators cators (minimum of Water (A1) ter Table (A2)	one is re	Nater-Stai Aquatic Fa	ned Leave una (B13)	es (B9)		S	urface Soil Cracks eomorphic Positior	(B6)	Shallow Aquitard (I Microtopographic F	Relief (D
Vetland Hy Primary indic Surface High Wa Saturatic	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3)	one is re	Nater-Stai Aquatic Fa Frue Aquat	ned Leave una (B13) tic Plants	es (B9) (B14)		S G D	urface Soil Cracks eomorphic Positior rainage Patterns (E	(B6)	Shallow Aquitard (I	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	one is re	Water-Staii Aquatic Fa Frue Aquat Hydrogen S	ned Leave una (B13) tic Plants Sulfide Oc	es (B9) (B14) dor (C1)		S G D M	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1	(B6)S 1 (D2)N B10)R	Shallow Aquitard (I Microtopographic F	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2)	one is re	Water-Staii Aquatic Fai Frue Aquat Hydrogen S Oxidized R	ned Leave una (B13) tic Plants Sulfide Oc hizospher	es (B9) (B14) dor (C1) res on Livi	ing Roots (	S G D M (C3)D	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T	(B6)S 1 (D2)N 810)F 6) able (C2)	Shallow Aquitard (I Microtopographic F	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3)	one is re	Water-Staii Aquatic Fai Frue Aquat Hydrogen S Oxidized R Presence c	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce	es (B9) (B14) dor (C1) res on Livi d Iron (C4	.)	Si G D M (C3)D	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2)	one is re	Water-Staii Aquatic Fai Frue Aquat Hydrogen S Oxidized R Presence c	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce	es (B9) (B14) dor (C1) res on Livi d Iron (C4	-	Si G D M (C3)D	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Vetland Hy Primary indid Surface High Wa Saturatid Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3)	one is re	Water-Staii Aquatic Fai Frue Aquat Hydrogen S Oxidized R Presence c	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reduction	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	.)	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4)	one is re	Water-Stain Aquatic Fail Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (G	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	.)	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4) osits (B5) on Visible on Aerial	one is re	Nater-Stain Aquatic Fai Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror Fhin Muck	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (G	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	.)	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or unted or Stressed	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7)	one is re	Nater-Stain Aquatic Fai Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror Fhin Muck	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (G	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	.)	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or unted or Stressed	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations:	one is re	Water-Stain Aquatic Fai Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Fhin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface (Gain in Re	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)	d Soils (C6	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or unted or Stressed	(B6)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Primary indice Surface High Wa Saturatice Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatice Imagery Field Obser	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present?	Yes _	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface (I lain in Re	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)	d Soils (C6	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed parsely Vegetated	(B6)S (D2)N (B10)F (6) able (C2) (B) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Water Table	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	Yes Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface (Ilain in Rei	es (B9) (B14) (bor (C1) res on Livi d Iron (C4 on in Tilleo C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Indicated Obser Surface Water Table Saturation P	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	Yes _	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror Thin Muck Other (Exp	ned Leave una (B13) tic Plants Sulfide Oc hizospher of Reduce n Reductic Surface (Ilain in Rei	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed parsely Vegetated	(B6)S (D2)N (B10)F (6) able (C2) (B) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test (	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Independent of the Communication Field Obser Surface Water Table Saturation P includes cal	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) of or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp  No No No	ned Leave una (B13) tic Plants Sulfide Ochizospher of Reduce of Reductic Surface (Ilain in Re	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Independent of the Communication Field Obser Surface Water Table Saturation P includes cal	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp  No No No	ned Leave una (B13) tic Plants Sulfide Ochizospher of Reduce of Reductic Surface (Ilain in Re	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Independent Surface Water Water Table Saturation Princludes cal	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) of or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp  No No No	ned Leave una (B13) tic Plants Sulfide Ochizospher of Reduce of Reductic Surface (Ilain in Re	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D4
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Independent Surface Water Water Table Saturation Princludes cal	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) of or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp  No No No	ned Leave una (B13) tic Plants Sulfide Ochizospher of Reduce of Reductic Surface (Ilain in Re	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Independent Surface Water Water Table Saturation Princludes cal	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) of or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stain Aquatic Fait Frue Aquat Hydrogen S Dxidized R Presence of Recent Iron Fhin Muck Other (Exp  No No No	ned Leave una (B13) tic Plants Sulfide Ochizospher of Reduce of Reductic Surface (Ilain in Re	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche	es):es):	G G G G G G G G G G G G G G G G G G G	urface Soil Cracks eomorphic Positior rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology	(B6)S (D2)N (B10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Vater Table Saturation P includes cal Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) tor Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? poillary fringe) Wetland hydrology	Yes Yes _	Water-Stain Aquatic Far Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Fhin Muck Other (Exp  No No No Rators wer	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (I lain in Rei  X X De Te not pre	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inche epth (inche	es):es):	(C3) _ D _ C _ C _ S _ S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?	(B6)S (D2)N (B10)R (B) (B) (B) (B) (B) (B) (B) (B) (B) (B)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Vater Table Saturation P includes cal Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? present? Wetland hydrolo	Yes _ Yes _ gy indice	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Thin Muck Other (Exp  No No No Rators wer  te map sh	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X De Te not pre  owing sa	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche	es): es): es):	(C3) _ D _ C _ S _ S _ S _ S _ S _ S _ S _ S _ S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed parsely Vegetated  Hydrology Present?	(B6)S (D2)N (B10)R (B) (B) (B) (B) (B) (B) (B) (B) (B) (B)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Vater Table Saturation P includes cal Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? Wetland hydrolo  OF FINDINGS A Vegetation present	Yes _ Yes _ gy indice	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Thin Muck Other (Exp  No No No Rators wer  te map sh Yes	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X De Te not pre  owing sa No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche	es): es): es): oint locati	Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area	(B6)S (D2)N (B10)R (B) (B) (B) (B) (B) (B) (B) (B) (B) (B)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)  Ce (B8)  No X	Relief (D
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Iron Described Obser Surface Water Table Saturation P includes cal Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present? wetland hydrolo  OF FINDINGS A Vegetation present	Yes _ Yes _ gy indice	Water-Stain Aquatic Fa Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence c Recent Iror Thin Muck Other (Exp  No No No Rators wer  te map sh Yes Yes Yes	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X Dei Te not pre  owing sa No No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche	es): es): es): es): soint locati	C3) C Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Yes	(B6)S (D2)N (B10)R (B) (B) (B) (B) (B) (B) (B) (B) (B) (B)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)	Relief (D
Petland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Iron Described Obser Surface Water Table Saturation P includes cal Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? Wetland hydrolo  OF FINDINGS A Vegetation present	Yes _ Yes _ gy indice	Water-Stain Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Thin Muck Other (Exp  No No No Rators wer  te map sh Yes	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X De Te not pre  owing sa No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche	es): es): es): es): soint locati	C3) C Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area	(B6)S (D2)N (B10)R (B) (B) (B) (B) (B) (B) (B) (B) (B) (B)	Shallow Aquitard (I Microtopographic F FAC-Neutral Test ( (C9)  Ce (B8)  No X	Relief (D
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Inagery Field Obser Surface Wat Vater Table Saturation P includes cal Remarks:  SUMMARY Hydrophytic Hydric Soils Vetland Hyd	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolo  OF FINDINGS A Vegetation present? Irology Present?	Yes - Yes - Test - Yes - Yes - Yes - Test - Yes - Yes - Test - Yes - Yes - Test - Yes - Ye	Water-Stain Aquatic Fa Aquatic Fa Frue Aquat Hydrogen S Dxidized R Presence of Recent Iror Thin Muck Other (Exp  No No No Rators wer  te map sh Yes Yes Yes Yes	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X Def Te not pre  owing sa  No No No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche x x x x	es): es): es): es): oint locati ls th with lf ye	ons, trans ne Sample sin a wetla s, optional	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6)S (D2)N (B10)R (B10)	Shallow Aquitard (I Microtopographic FFAC-Neutral Test (Value (C9)   Ce (B8)   No X	Relief (De
Vetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Sield Obser Surface Water Table Saturation P sincludes cal Remarks:  SUMMARY Hydrophytic Hydric Soils Vetland Hydro Remarks: (	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolo  OF FINDINGS A Vegetation present? Present? Irology Present?	Yes	Water-Stain Aquatic Far Application And And And And And And And And And An	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X Def Te not pre  owing sa  No No No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche x x x x	es): es): es): es): oint locati ls th with lf ye	ons, trans ne Sample sin a wetla s, optional	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6)S (D2)N (B10)R (B10)	Shallow Aquitard (I Microtopographic FFAC-Neutral Test (Value (C9)   Ce (B8)   No X	Relief (De
Vetland Hy Irimary indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Sield Obser Surface Water Table Staturation P Includes cal Remarks: SUMMARY Hydrophytic Remarks: (Remarks:	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolo  OF FINDINGS A Vegetation present? Irology Present?	Yes	Water-Stain Aquatic Far Application And And And And And And And And And An	ned Leave una (B13) tic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Ilain in Rei  X Def Te not pre  owing sa  No No No	es (B9) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inche epth (inche epth (inche epth (inche x x x x	es): es): es): es): oint locati ls th with lf ye	ons, trans ne Sample sin a wetla s, optional	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (C aturation Visible or runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6)S (D2)N (B10)R (B10)	Shallow Aquitard (I Microtopographic FFAC-Neutral Test (Value (C9)   Ce (B8)   No X	Relief (D

Project/Site: Emberclear Water Main		ty/County: Birdsbo			Sampling Date:	7/19/2016
Applicant/Owner: Reading Water Author	ity				Sampling Point:	W2
Investigator(s): CM, MM			Section	, Township, Range	e:	
Landform (hillslope, terrace, etc.):	ter	race		Local relief:	flat	Slope (%): 0
Subregion (LRR or MLRA) MLRA	A 148 La	t: 40.26662		Long: -75	5.806289	Datum: WGS 84
Soil Map Unit Name: Birdsboro silt loam,	3 to 8 percent slopes	(BmB)			l classification:	
·					_	
Are climatic/hydrologic conditions on the sit Are Vegetation $\_$ , Soil $\_$ , or Hydrologic $_$ , very $_$ ,	* *			No (If		emarks.) Yes_X_No
Are Vegetation , Soil , or Hyd	drology natural	y problematic?	(If need	ed, explain any ar	nswers in Remark	s.)
VEGETATION Use Scientific Names of P						
<u>Tree Stratum</u> (Plot size: 30'	Absolute ) % Cover	Dominant Species?	Indicator Status	Dominance 1	Test worksheet:	
1				Number of Do	ominant Species	
2.				That Are OBL	, FACW, or FAC	5 (A)
3.						
A				Total Number	r of Dominant	
4				Species Acro		7 (B)
5				- Openios 7 (0/0)	oo 7 iii Oilata.	
6				Percent of Do	minant Species	
7					., FACW or FAC	0.7 (A/R)
0		T-1-1-0		That 7 to obe	., . ,	(A/B)
	0	= Total Cover				
						_
					ndex worksheet	<u>:</u>
Sapling/Shrub Stratum (Plot size: 1	5')			Total % C	Cover of:	Multiply by:
1. Salix nigra	5	Υ	FACW	OBL Species	50x	1 =50
2. Platanus occidentalis	5	Y	FACU	FACW specie	es 50 x 2	2 = 100
3. Cornus sericea	5	Y	FACW	FAC species	15 x	3 = 45
4.				FACU specie		
5.				UPL species		
6					s: 130 (A)	
0	15	= Total Cover	-		e Index = B/A =	
		- Total Cover		Fievalence	- Index - D/A	1.30
Harb Stratum (Plat size: 5'	١			Hydrophytic	Vegetation India	notoro:
Herb Stratum (Plot size: 5'		V	OBL			<del></del>
1. Typha latifolia	20	<u> </u>	OBL		for Hydrophytic V	regetation
2. Impatiens capensis		Y	FACW		Test is >50%	
3. Lythrum salicaria	10	<u>N</u> .	FACW		Index is ≤3.0 <sup>1</sup>	
4. Asclepias incarnata		<u>N</u>	OBL			(Provide supporting
5. Persicaria sagittata	10	<u>N</u>	OBL		narks or on separ	4
6. Daucus carota	5	N	FACU	_	c Hydrophytic Ve	getation '
7. Phalaris arundinacea	5	N	FACW	(Explain)		
8. Persicaria perfoliata	5	N	FAC	<sup>1</sup> Indicators of	hydric soil and we	etland hydrology must
9. Juncus effusus	5	N	FACW		nless disturbed or	
10. Scirpus atrovirens	5	N	OBL	Definitions of	of Vegetation Str	ata:
11. Euthamia graminifolia	5	N	FAC			
12. Vicia sp.	5	N	NA	Tree - Woody	plants 3 in. (7.6	cm) or more in DBH,
13.				regardless of	height.	
	105	= Total Cover		Sapling/shru	ı <b>b</b> - Woody plants	less than 3 in. DBH
					nan 3.28 ft (1m) ta	
Woody Vine Stratum (Plot size: 30	')			_		ody) plants, regardless
1. Toxicodendron radicans		Υ	FAC		oody plants less	
Muscadine rotundifolia	5		FACU			s greater than 3.28 ft in
	<u> </u>	T	FACU	height	- All Woody viries	o greater triali 3.20 il III
3				Height		
4				Hydroph	nytic	V
	10	= Total Cover		Vegetation F	- 406	No
				_		
Remarks: (Include photo numbers here or o			tion was p	resent based on t	he dominance an	d prevalence index
tests. Five out of seven dominant species v	vere OBL, FACW, or	FAC.				

SOIL								5	Sampling Point:	W2
Profile Descr	iption: Describe to t	he depth	needed to docum	ent the indi	cator or co	nfirm the	absence of i	indicators.	)	
Depth	Matrix			Redox Feat					,	
		0/				Loc <sup>2</sup>	_ <sub></sub>	4	D.	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>			kture	Re	emarks
0-7	7.5YR 3/2	85	7.5YR 4/4	15	C	M		am		
							_			
							_			
									' <u> </u>	
<sup>1</sup> Type: C=Cc	ncentration, D=De	nletion R	M=Reduced Mar	rix CS=Co	vered or C	Coated S	and Grains	<sup>2</sup> I	Location: PL=Pore L	ining M=Matrix
Hydric Soil		prodori, r				Journa C	dia Granio.		ndicators for Proble	
1 -				pped Matrix				'		_
Histosol	` '			k Surface (			0) (111 - 1			(MLRA 147, 148)
	pipedon (A2)						8) <b>(MLRA 1</b> 4	17, 148)	Coastal Prairie R	, ,
Black Hi				Dark Surfa			47, 148)		(MLRA 147,148)	
	n Sulfide (A4)		Loa	my Gleyed	Matrix (F2	2)		_	Piedmont Floodp	lain Soils
	l Layers (A5)			leted Matri					(F19) <b>(MLRA 136</b>	
2 cm Mu	ck (A10) (LRR N)		X Red	ox Dark Su	ırface (F6)			_		rk Surface (TF12)
Depleted	Below Dark Surfa	ce (A11)	Dep	leted Dark	Surface (F	<del>-</del> 6)		_	Other (Explain in	Remarks)
Thick Da	ark Surface (A12)		Red	ox Depress	sions (F8)			_		
Sandy M	lucky Mineral (S1)	(LRR N, I	MLRA Iron	-Manganes	se Masses	(F12) (L	RR N, MLR	A 136)		
147, 148				oric Surface	e (F13) <b>(M</b> I	LRA 136	6, 122)		3Indicators of hydro	phytic vegetation and
Sandy G	leyed Matrix (S4)				. , .		MLRA 148)		wetland hydrology r	
	edox (S5)						A 127, 147)		unless disturbed or	
- Canay IV	odox (OO)			T GIOTICIVIO	atoriai (i Z i	) (IIII	(121, 141)		dilicoo diotarbea or	problematic.
Postrictivo	Layer (if observed	1).			1					
	• .	· .			Llvalui	ia Cail D	wasam#2	Vaa	V No	
Type:		ock 7			Hyun	ic 30ii F	resent?	Yes _	No	
Depth (ir										
Domarke: Hy	dric soils were pre	cont at M	12 Soils contains	d a rodov (	dark curfac	20				
Tremaiks. H	vario solis were pre-	seni ai vi	z. Jons Containe	a redox c	uaik Suiiac					
HYDROLOG	Υ									
Wetland Hy	drology Indicators	s:								
Primary indic	cators (minimum of	one is re	quired; check all	that apply)	)	S	Secondary In	idicators (r	minimum of two requir	red)
X Surface	Water (A1)	V	/ater-Stained Lea	aves (B9)			Surface So	oil Cracks	(B6) Shallow	v Aquitard (D3)
X High Wa	iter Table (A2)	—_A	quatic Fauna (B1	3)		×	Geomorph			pographic Relief (D4)
X Saturation			rue Aquatic Plan			_	Drainage F		` '	eutral Test (D5)
	arks (B1)		ydrogen Sulfide			_	Moss Trim	•		24.14. 1 35t (2-5)
	nt Deposits (B2)		xidized Rhizosph		vina Roots	(C3)	Dry Seaso			
_			•		•	_	_			
	oosits (B3)		resence of Redu				_Crayfish B			
	it or Crust (B4)		ecent Iron Reduc		ea Solis (Ci	<u> </u>			Aerial Imagery (C9)	
	osits (B5)		hin Muck Surface	. ,		_			Plants (D1)	
	on Visible on Aerial		ther (Explain in F	Remarks)		_	_Sparsely V	egetated (	Concave Surface (B8)	)
Imagery	• •									
Field Obser										
Surface Wat	er Present?		_	Depth (incl		0	_			
Water Table	Present?	Yes	X_ No	Depth (incl	hes):	0	_   +	Hydrology	i	
Saturation P	resent?	Yes	X_ No	Depth (incl	hes):	0	_	Present?	Yes X	No
(includes car	oillary fringe)						_			
Remarks:	Wetland hydrolog	y indica	tors were prese	nt. Water	was pres	ent at th	he surface.	The wetla	and is within the floo	odway of Hay Creek.
		-	•							
SUMMARY	OF FINDINGS A	ttach site	man showing	samnling r	noint locat	tions tr	ansects im	nortant fe	atures etc.)	
	Vegetation present		Yes X No				ple Area	portantie	atures, etc./	
Hydric Soils			Yes X No			hin a we	-	Voc	X No	
								_	X No	
Ivveiland Hyd	drology Present?		Yes X No	, <u> </u>	іт у	es, optio	nal Wetland	Site ID:		
Domorlia: /	Evoloin altamatic	0 0000	duroo boro er !	0.000===	to rona - 1	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	at three and	of there :	wotland seits in 1440	Lwoo the
	•						et triree out	oi inree i	wetland criteria. W2	was the
representat	ive data point for	vveuan	u ∠. vveuand 2	15 100% P	r⊏ivi wetia	ıııu.				

Project/Site: Emberclear Water M Applicant/Owner: Reading Water Investigator(s): CM, MM		Cit	y/County: Bir		State: <u>PA</u> on, Township, Rang	Sampling Date: Sampling Point:	
		4				JO	Clara (0/): 0
Landform (hillslope, terrace, etc.):			ace		Local relief:		Slope (%): 0
Subregion (LRR or MLRA)	MLRA 148	Lat				75.806172	Datum: WGS 84
Soil Map Unit Name: Birdsboro sil	t loam, 3 to 8 per	cent slopes	(BmB)		NW	/I classification:	
Are climatic/hydrologic conditions or Are Vegetation X, Soil Are Vegetation , Soil   VEGETATION Use Scientific Name	, or Hydrology _ , or Hydrology _	significa	antly disturbed	? Are "N	X No (I Normal Circumstandeded, explain any a	ces" present?	Yes X No
VEGETATION Use Scientific Nair	ies oi Fiants	Absolute	Dominan	t Indicator	Dominance	Test worksheet:	
Troo Stratum (Plot aiza:	20' \	% Cover	Species?		Dominance	rest worksneet.	
Tree Stratum (Plot size:		% Cover	Species	Status	No mark and a CD		
1.						ominant Species	
2					That Are OBI	L, FACW, or FAC:	: <u>0</u> (A)
3.				_	_		
4.					Total Numbe	er of Dominant	
5.					Species Acro	oss All Strata:	2 (B)
6.					-   '		
			-	_	Percent of Do	ominant Species	
7				_		L, FACW or FAC	0 (A/B)
0			T + 1 = 0	_	-	2,171011 011710	(A/B)
		0 =	= Total Cover				
					Prevelence	Index wellsebeet	<del>.</del>
0 11 101 1 01 1 1 1	451					Index worksheet:	='
<u>Sapling/Shrub Stratum</u> (Plot size:							Multiply by:
1				_	OBL Species		
2					_ FACW specie		
3					FAC species	0 x 3	3 = 0
4.					FACU specie		
5.				_	UPL species		
6				_	Column Tota		400 (B)
o		0 =	= Total Cover		-	e Index = B/A =	
Herb Stratum (Plot size:	5' )				Hydrophytic	Vegetation Indic	cators:
1. Poa pratensis		60	Υ	FACU	Rapid Test	t for Hydrophytic V	/egetation
2. Digitaria sanguinalis		40	Y	FACU		e Test is >50%	
					_	e Index is ≤3.0 <sup>1</sup>	
3				_			(Provide supporting
4				_			
5.					-	marks or on separ	
6				_	_	ic Hydrophytic Veg	jetation '
7				_	(Explain)		
8				_	_ Indicators of	f hydric soil and we	etland hydrology must
9.					be present, u	unless disturbed or	· problematic
10.					<u>Definitions</u>	of Vegetation Stra	ata:
11.			_				
12.					Tree - Wood	y plants 3 in. (7.6	cm) or more in DBH,
13.				_	regardless of		,
		100	= Total Cover	_	<b>-</b>	•	less than 3 in. DBH
		100	- Total Cover			<b>ub</b> - woody plants than 3.28 ft (1m) ta	
	001				_		
Woody Vine Stratum (Plot size: _						,	oody) plants, regardless
1				_	_	woody plants less	
2.					_ Woody vine	s - All woody vines	s greater than 3.28 ft in
3.					height		
4.			= Total Cover	_	- Hydrop Vegetation	7 700	NoX
Remarks: (Include photo numbers h		ite sheet.) A	Area where sa	mple point wa	as taken is routinel	y mowed. Vegetat	ion at W2/W3 UPL did
not meet any of the hydrophytic veg	etation tests.						

SOIL								,	Sampling Point:	W2/W3 UPL
Profile Descr	iption: Describe to	the denth	needed to	documen	nt the indic	ator or con	firm the ah	sence of indicators.	)	
Depth	Matrix	o acptii			dox Featu		are ab		,	
		0/	0-1				12	T		Demode
(inches)	Color (moist)	%	Color (n	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-2	7.5YR 3/3	100						loam		
2-5	7.5YR 4/3	100						loam		
									-	
Typo: C=Co	ncentration, D=De	nlotion [	DM-Doduc	od Matrix	/ CS=Cov	orod or Co	atod Sand	Grains 2	ocation: DI =	Pore Lining, M=Matrix.
		pietion, i	NVI-INEGUC				Jaleu Sanu			
Hydric Soil			_		ed Matrix	. ,		ı		Problematic Hydric Soils
Histosol	` '		_		Surface (S			-	2 cm Mucl	(A10) <b>(MLRA 147, 148)</b>
Histic Ep	pipedon (A2)		_	Polyva	alue Belov	v Dark Surf	face (S8) <b>(</b> I	MLRA 147, 148)	Coastal Pr	airie Redox (A16)
Black Hi	stic (A3)		_	Thin D	Oark Surfa	ce (S9) (M	LRA 147,	148)	(MLRA 14	17,148)
Hydroge	n Sulfide (A4)			Loamy	y Gleyed N	Matrix (F2)			Piedmont	Floodplain Soils
Stratified	Layers (A5)			Deple	ted Matrix	(F3)		-	(F19) <b>(ML</b>	RA 136, 147)
	ck (A10) (LRR N)				c Dark Sur					ow Dark Surface (TF12)
	Below Dark Surfa	ce (A11)	_			Surface (F6	3)	-		lain in Remarks)
	ark Surface (A12)	(/ ( / ( / )	_		Depressi		<b>,</b> ,	-	Other (EX	nam m remarks)
		// DD N					E42\ <b>/I DD</b>	N. M. DA 426\		
	lucky Mineral (S1)	(LKK N,	WILKA _					N, MLRA 136)	2	
147, 148	,		_			(F13) <b>(ML</b> I				hydrophytic vegetation ar
	leyed Matrix (S4)		_			plain Soils			wetland hydr	ology must be present,
Sandy R	edox (S5)		_	Red P	arent Mat	erial (F21)	(MLRA 12	7, 147)	unless distur	bed or problematic.
Restrictive	Layer (if observed	d):								
Type:		ock				Hydric	Soil Pres	ent? Yes	No X	
Depth (ir		5		_		11,4		·····		-
Boptii (ii				_						
	dric soil indicators									
HYDROLOG	sy									
		s:								
Wetland Hy	drology Indicators		equired: ch	neck all th	at apply)		Sec	ondary Indicators (r	ninimum of two	required)
<b>Wetland Hy</b> e Primary indic	drology Indicators cators (minimum of	one is re						ondary Indicators (r		
Wetland Hy Primary indic Surface	drology Indicators cators (minimum of Water (A1)	one is re	Vater-Stair	ned Leave	es (B9)		S	urface Soil Cracks	(B6)S	Shallow Aquitard (D3)
Wetland Hy Primary indic Surface High Wa	drology Indicators cators (minimum of Water (A1) ter Table (A2)	one is re	Water-Stair ∖quatic Fau	ned Leave una (B13)	es (B9) )		X G	urface Soil Cracks eomorphic Position	(B6) _ S (D2) _ N	Shallow Aquitard (D3) Nicrotopographic Relief (D4
Wetland Hy Primary indic Surface High Wa Saturatio	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3)	one is re / 7	Nater-Stair Aquatic Fau Frue Aquat	ned Leave una (B13) ic Plants	es (B9) ) (B14)		S X G D	urface Soil Cracks eomorphic Positior rainage Patterns (E	(B6)S (D2)N (10)F	· /
Wetland Hy Primary indic Surface High Wa Saturatic Water M	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	one is re V 1 1	Water-Stair Aquatic Fau Frue Aquat Hydrogen S	ned Leave una (B13) ic Plants Sulfide Oc	es (B9) ) (B14) dor (C1)		S X G D M	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1	(B6)S (D2)N (10)F	Shallow Aquitard (D3) Nicrotopographic Relief (D4
Wetland Hy Primary indic Surface High Wa Saturatic Water M	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3)	one is re	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Oxidized Rl	ned Leave una (B13) ic Plants Sulfide Oc hizosphei	es (B9) ) (B14) dor (C1) res on Livi	ing Roots (	S X G D M	urface Soil Cracks eomorphic Positior rainage Patterns (E	(B6)S (D2)N (10)F	Shallow Aquitard (D3) Nicrotopographic Relief (D4
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	one is re	Water-Stair Aquatic Fau Frue Aquat Hydrogen S	ned Leave una (B13) ic Plants Sulfide Oc hizosphei	es (B9) ) (B14) dor (C1) res on Livi		X G D M C3) D C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci	(B6)	Shallow Aquitard (D3) Microtopographic Relief (D4 FAC-Neutral Test (D5)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)	one is re	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Oxidized RI Presence o	ned Leave una (B13) ic Plants Sulfide Oc hizosphei of Reduce	es (B9) ) (B14) dor (C1) res on Livi		X G D M C3) D C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T	(B6)	Shallow Aquitard (D3) Microtopographic Relief (D4 FAC-Neutral Test (D5)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4)	one is re	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iron	ned Leave una (B13) ic Plants Sulfide Oc hizosphei of Reduce on Reduction	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilleo	ł)	Si X G D M C3) D C C Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ca aturation Visible on	(B6)	Shallow Aquitard (D3) Microtopographic Relief (D4 FAC-Neutral Test (D5)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5)	one is re V	Nater-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iron Fhin Muck	ned Leave una (B13) ic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	ł)	S X G D M C3)C C )S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ca aturation Visible on	(B6)	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5) on Visible on Aerial	one is re V	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iron	ned Leave una (B13) ic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	ł)	S X G D M C3)C C )S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ca aturation Visible on	(B6)	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7)	one is re V	Nater-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iron Fhin Muck	ned Leave una (B13) ic Plants Sulfide Oc hizospher of Reduce on Reductic Surface (	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	ł)	S X G D M C3)C C )S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ca aturation Visible on	(B6)	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations:	Fone is re	Nater-Stair Aquatic Fat Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Oc hizospher if Reduce n Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)	d Soils (C6)	Si X G D M C3) D C Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ca aturation Visible on	(B6)	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Primary indice Surface High Wa Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Imagery Surface Water	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present?	- Ves	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iror Thin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Oc hizosphei of Reduce of Reductic Surface ( lain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inch	d Soils (C6)	C3) _ D _ C _ S _ S _ S _ S _ S _ S _ S _ S _ S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed parsely Vegetated	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial (B7) vations: er Present? Present?	Yes Yes	Water-Stair Aquatic Fat Frue Aquat Hydrogen S Dxidized R Presence o Recent Iror Fhin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reductic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	- Ves	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized RI Presence o Recent Iror Thin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reductic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks) epth (inch	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ S _ S _ S _ S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed parsely Vegetated	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D4  AC-Neutral Test (D5)  (C9)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Other (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reduction Surface (Idain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch-	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present?	Yes	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Other (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reduction Surface (Idain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch-	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Other (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reduction Surface (Idain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch-	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Other (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reduction Surface (Idain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch-	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Imagery Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? present?	Yes	Water-Stair Aquatic Fau Frue Aquat Hydrogen S Dxidized Ri Presence o Recent Iron Fhin Muck S Other (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher if Reduce in Reduction Surface (Idain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch-	es):	C3) _ D _ C _ S _ S _ S _ S _ S _ C _ D _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated	(B6)S (D2)N (10)F 6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hyderimary indicates Surface High Wasturation Water Malgal Malron Dep Inundation Imagery Field Obser Surface Water Table Saturation Page (includes cape Remarks: Variance Water Table Remarks: Variance Water Table Saturation Pagery Remarks: Variance Water Table Sa	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? poillary fringe) Wetland hydrolog	Yes _ Yes _ gy indica	Water-Stair Aquatic Fat Aquatic Fat Hydrogen S Dxidized RI Presence of Recent Iron Thin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher of Reduce n Reductic Surface (Ilain in Re	es (B9) ) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch- epth (inch-	es):es):	C3) _ D _ C _ S _ S _ S _ S _ S _ S _ C _ D _ C _ C _ C _ C _ S _ C _ S _ C _ S _ C _ C	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed barsely Vegetated  Hydrology Present?	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hyderimary indicates Surface High Was Saturation Water M Sedimer Drift Dep Inundation Imagery Field Obser Surface Water Table Saturation P (includes cape Remarks: Valent Summary)	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? present? wetland hydrolog	Yes _ Yes _ gy indica	Water-Stair Aquatic Fat Aquatic Fat Hydrogen S Dxidized RI Presence of Recent Iron Thin Muck S Dther (Expl	ned Leave una (B13) ic Plants Sulfide Ochizospher of Reduce n Reductic Surface (Iain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inch epth (inch esent.	es): es): es): oint location	Si X G D D D D D D D D D D D D D D D D D D	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed parsely Vegetated  Hydrology Present?	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hyderimary indicates Surface High Was Saturation Water Malgal Malron Dep Inundation Imagery Field Obser Surface Water Table Saturation Poincludes cap Remarks: Summary Hydrophytic	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? present? wetland hydrolog	Yes _ Yes _ gy indica	Water-Stair Aquatic Fat Aquatic Aq	ned Leave una (B13) ic Plants Sulfide Ochizospher of Reduce n Reductic Surface (Iain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inchepth (inchepth (inchepth (inchepth)) esent.	es): es): es): oint locatic Is th	Si   X   G   D   M   C3)	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D4)  AC-Neutral Test (D5)  (C9)  De (B8)  No X
Wetland Hy Primary indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Imagery Field Obser Surface Water Table Saturation P (includes cap Remarks: V	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? present? wetland hydrolog  OF FINDINGS A Vegetation present	Yes _ Yes _ gy indica	Water-Stair Aquatic Fau Aquatic Aquati	ned Leave una (B13) ic Plants Sulfide Och hizospher of Reduce n Reductic Surface ( lain in Re  X Do X Do e not pre	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inch epth (inch epth (inch	es): es): es): es): oint location ls th with	C3) _ D C C ) _ Si S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Yes	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Aicrotopographic Relief (D4)  FAC-Neutral Test (D5)  (C9)  See (B8)
Wetland Hy Primary indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Imagery Field Obser Surface Wat Water Table Saturation P (includes cap Remarks: V	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial (B7) vations: er Present? Present? Present? present? wetland hydrolog	Yes _ Yes _ gy indica	Water-Stair Aquatic Fat Aquatic Aq	ned Leave una (B13) ic Plants Sulfide Ochizospher of Reduce n Reductic Surface (Iain in Re	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inchepth (inchepth (inchepth (inchepth)) esent.	es): es): es): es): oint location ls th with	C3) _ D C C ) _ Si S	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on unted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area	(B6)S (D2)N (10)F (6) able (C2) 3) Aerial Imagery Plants (D1) Concave Surface	Shallow Aquitard (D3)  Microtopographic Relief (D4)  AC-Neutral Test (D5)  (C9)  De (B8)  No X
Wetland Hyderimary indicated Surface High Was Saturation Water Malgal Maler Inon Dep Inundation Imagery Field Obser Surface Water Table Saturation Poincludes cap Remarks: Summarks: Summa	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS A Vegetation present? Present?	Yes _	Water-Stair Aquatic Fau Aquatic Aquati	ned Leave una (B13) ic Plants Sulfide Och hizospher of Reduce n Reductic Surface ( lain in Re  X Do X Do Reduction Reduction No No No	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inch epth (inch epth (inch sent.	es): es): es): es): oint location ls th with lf ye:	C3) _ D _ C ) _ Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6) _ S (D2) _ M (D2) _ M (D2) _ M (S10) _ F (S10) _ S (S10) _ S	Shallow Aquitard (D3)  Microtopographic Relief (D4)  AC-Neutral Test (D5)  (C9)  De (B8)  No X  No X
Wetland Hyderimary indicated Surface High Was Saturation Water Malgal Maler Inon Dep Inundation Imagery Field Obser Surface Water Table Saturation Poincludes cap Remarks: Summarks: Summa	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS A Vegetation present? Present?	Yes _	Water-Stair Aquatic Fau Aquatic Aquati	ned Leave una (B13) ic Plants Sulfide Och hizospher of Reduce n Reductic Surface ( lain in Re  X Do X Do Reduction Reduction No No No	es (B9) ) (B14) dor (C1) res on Livi od Iron (C4 on in Tilled C7) marks)  epth (inch epth (inch epth (inch sent.	es): es): es): es): oint location ls th with lf ye:	C3) _ D _ C ) _ Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6) _ S (D2) _ M (D2) _ M (D2) _ M (S10) _ F (S10) _ S (S10) _ S	Shallow Aquitard (D3)  Microtopographic Relief (D4)  AC-Neutral Test (D5)  (C9)  De (B8)  No X
Wetland Hyderimary indicated Surface High Was Saturation Water Malgal Maler Inundation Imagery Field Obser Surface Water Table Saturation Polymore Surface Water Table Saturation Polymore Remarks: Versie Summarks: Versie Summark	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS A Vegetation present? Present?	Yes	Water-Stair Aquatic Fau Ave	ned Leave una (B13) ic Plants Sulfide Och hizospher of Reduce n Reductic Surface (Iain in Re  X Do X Do Renot pre  owing sa No No No re or in a	es (B9) (B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) marks)  epth (inch epth (inch epth (inch exent.	es): es): es): es): oint location ls th with lf ye:	C3) _ D _ C ) _ Si	urface Soil Cracks eomorphic Position rainage Patterns (E oss Trim Lines (B1 ry Season Water T rayfish Burrows (Ci aturation Visible on runted or Stressed barsely Vegetated  Hydrology Present?  ects, important fe Area nd?  Wetland Site ID:	(B6) _ S (D2) _ M (D2) _ M (D2) _ M (S10) _ F (S10) _ S (S10) _ S	Shallow Aquitard (D3)  Microtopographic Relief (D4)  Microtopographic Relief (D5)  Microtopograp

Project/Site: Emberclear Water Main	City	/County: Birdsbo		
Applicant/Owner: Reading Water Authority				State: PA Sampling Point: W3
Investigator(s): CM, MM			Section,	, Township, Range:
Landform (hillslope, terrace, etc.):				Local relief: flat Slope (%): 0
Subregion (LRR or MLRA) MLRA 148		40.266362	<u>'</u> L	Long:75.806138
Soil Map Unit Name: <u>Urban land-Penn complex, 0 t</u>	to 8 percent s	slopes (UxB)		NWI classification:
Are climatic/hydrologic conditions on the site typical f Are Vegetation , Soil , or Hydrology Are Vegetation , Soil , or Hydrology	significar	ntly disturbed?	Are "Nor	No (If no, explain in Remarks.) rmal Circumstances" present? Yes X No ed, explain any answers in Remarks.)
VEGETATION Use Scientific Names of Plants	^ haduto	Daminant	la diseter	Deminaria Test markabasti
Trace Chapture (Diet size) 201	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30' )	% Cover	Species?	Status	Number of Deminant Chasins
1 2.				Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
				Illat Ale OBL, FACVV, OF FAC (A)
3. 4.				Total Number of Dominant
4 5				Species Across All Strata: 3 (B)
6.				
7.				Percent of Dominant Species
8.				That Are OBL, FACW or FAC 1 (A/B)
	0 =	Total Cover		
				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15' )				Total % Cover of: Multiply by:
1. Salix nigra	5	Y	FACW	OBL Species 0 x 1 = 0
2.				FACW species 100 x 2 = 200
3.				FAC species 0 x 3 = 0
4				FACU species <u>15</u> x 4 = <u>60</u>
5.				UPL species 0 x 5 = 0
6				Column Totals: 115 (A) 260 (B)
	5 =	Total Cover		Prevalence Index = B/A = 2.26
Herb Stratum (Plot size: 5' )	40		= : O\A/	Hydrophytic Vegetation Indicators:
1. Phalaris arundinacea	40	<u>Y</u> Y	FACW	Rapid Test for Hydrophytic Vegetation
2. Impatiens capensis	40		FACW	X Dominance Test is >50%
3. Lythrum salicaria	10	N	FACU FACU	X Prevalence Index is ≤3.0 <sup>1</sup>
4. Dipsacus fullonum				Morphological Adaptations <sup>1</sup> (Provide supporting
5. Daucus carota	<u>5</u>	N	FACU	data in Remarks or on separate sheet)
6. Vernonia noveboracensis	<u> </u>	N	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7 8.				(Explain)  1 Indicators of hydric soil and wetland hydrology must
^				be present, unless disturbed or problematic
9.				Definitions of Vegetation Strata:
11.				
12.				Tree - Woody plants 3 in. (7.6 cm) or more in DBH,
13.				regardless of height.
	110 =	Total Cover		Sapling/shrub - Woody plants less than 3 in. DBH
				and greater than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size:30')				Herb - All herbaceous (non-woody) plants, regardless
1				of size, and woody plants less than 3.28 ft tall
2.				Woody vines - All woody vines greater than 3.28 ft in
3		<u> </u>		height
4.				Hydrophytic
	=	Total Cover		Vegetation Present? Yes X No
Describe // selecte whote numbers here or on concre	1 boot \	Liveranhydio vogo	- t-t: on 1400	
Remarks: (Include photo numbers here or on separatests. Three out of three dominant species were OBL			etation was	s present based on the dominance and prevalence index
lests. Three out of three dominant species were obt	., [ AOVV, 01 1	-AC.		

SOIL								Sampling Point:	W3
Profile Descr	ription: Describe to t	he depth n	eeded to documer	nt the indic	ator or co	nfirm the a	bsence of indicators	s.)	
Depth	Matrix			edox Featu				,	
	Color (moist)	%			Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
(inches)			Color (moist)	<u>%</u>					Remarks
0-8	7.5YR 3/2	85	7.5YR 4/4	15	<u>C</u>	M	loam		
						· <u></u>			
1Tunor C=C	oncentration, D=De	olotion DA	1-Daduaad Matri	v CC=Co	varad ar C	Controd Cor	ad Craina	2Legation: DL =Dor	e Lining, M=Matrix.
		pielion, Ki				Jualeu Sai	iu Giailis.		
Hydric Soil				ed Matrix					blematic Hydric Soils <sup>3</sup>
Histosol	(A1)			Surface (S				2 cm Muck (A	10) <b>(MLRA 147, 148)</b>
Histic Ep	oipedon (A2)		Polyv	alue Belov	w Dark Su	rface (S8)	(MLRA 147, 148)	Coastal Prairie	e Redox (A16)
Black Hi	stic (A3)		Thin I	Dark Surfa	ace (S9) (N	<b>MLRA 147</b>	, 148)	(MLRA 147,1	48)
Hydroge	en Sulfide (A4)		Loam	y Gleyed I	Matrix (F2	?)		Piedmont Floo	odplain Soils
	d Layers (A5)			ted Matrix		,		(F19) <b>(MLRA</b>	•
	ick (A10) (LRR N)			x Dark Su					Dark Surface (TF12)
		00 (111)			, ,			Other (Explain	, ,
	d Below Dark Surfa	ce (ATT)		ted Dark	`	-0)		Other (Explain	ili Remarks)
	ark Surface (A12)			x Depress	. ,				
Sandy M	lucky Mineral (S1)	(LRR N, M	LRAlron-N	/langanes	e Masses	(F12) <b>(LR</b>	R N, MLRA 136)		
147, 148	3)		Umbr	ic Surface	(F13) (MI	LRA 136, 1	122)	3Indicators of hyd	drophytic vegetation and
Sandy G	Bleyed Matrix (S4)		Piedn	nont Flood	Iplain Soils	s (F19) (M	LRA 148)		gy must be present,
	Redox (S5)					) (MLRA 1		unless disturbed	
	()					, (			p
Postrictivo	Layer (if observed	١.			I				
	• •	· .			1		v	V N	
Type:		ck			Hydri	ic Soil Pre	sent? Yes	No	
Depth (ii	nches):	8							
Remarks: H	ydric soils were pre	sent at W3	<ol> <li>Soils contained</li> </ol>	a redox d	lark surfac	ce.			
L.									
HYDROLOG	2V								
-	drology Indicators					0	1 1 2 4		
	cators (minimum of							(minimum of two red	
	Water (A1)		iter-Stained Leav	. ,			Surface Soil Cracks		low Aquitard (D3)
X High Wa	ater Table (A2)	Aq	uatic Fauna (B13	)		X	Geomorphic Position	on (D2)Micro	otopographic Relief (D4)
X Saturation	on (A3)	Tru	e Aquatic Plants	(B14)			Drainage Patterns (	(B10) FAC	-Neutral Test (D5)
Water M	larks (B1)		drogen Sulfide O			_	Moss Trim Lines (B	316)	
	nt Deposits (B2)		idized Rhizosphe		ina Roots		Dry Season Water		
_					_		-		
	posits (B3)		esence of Reduce				Crayfish Burrows (0		2)
	at or Crust (B4)		cent Iron Reducti		d Soils (C	_		on Aerial Imagery (Cs	<del>3</del> )
	oosits (B5)		n Muck Surface				Stunted or Stressed		
Inundati	on Visible on Aerial	Oth	ner (Explain in Re	emarks)		_;	Sparsely Vegetated	d Concave Surface (	B8)
Imagery	(B7)								
Field Obser	vations:								
Surface Wat	ter Present?	Yes	No X D	epth (inch	ies):				
Water Table		Yes X		epth (inch		2	Hydrolog	IV	
Saturation P		Yes X		epth (inch	_	0	Present	-	No
		165	_ 110 D	epui (iiici	<u> </u>	0	Fresent	f 165 <u>A</u>	No
	pillary fringe)							41 11 141	
Remarks:	Wetland hydrolog	y indicato	ors were presen	t. Satura	tion was	present a	t the surface. The	e wetland is within	the floodway of Hay
Creek.									
SIIMMADV	OF FINDINGS A	tach site	man showing sa	amplina p	oint loca	tione tran	sects important	foatures etc.)	
			<del> </del>	amping p				ieatures, etc.)	
	Vegetation present		/es X No			he Sampl			
Hydric Soils			res X No			hin a wetl		X No	
Wetland Hyd	drology Present?	`	/es X No		If y	es, optiona	al Wetland Site ID:		
Remarks: (	Explain alternativ	e procedi	ures here or in a	a separat	e report.)	) W3 met	three out of three	wetland criteria. V	N3 was the
	tive data point for								
	•								
1									

Project/Site: Emberclear Water Main Applicant/Owner: Reading Water Authority	City/County: Birdsbo	State: PA	Sampling Date: 7/20/2016 Sampling Point: W4
Investigator(s): CM, MM			ange:
Landform (hillslope, terrace, etc.):	depression	Local relief:	
	Lat: 40.268502		-75.823008 Datum: WGS 84
Soil Map Unit Name: Birdsboro silt loam, 3 to 8 pero	cent slopes (BmB)		NWI classification:
Are climatic/hydrologic conditions on the site typical for Are Vegetation , Soil , or Hydrology Are Vegetation , Soil , or Hydrology	significantly disturbed?	Are "Normal Circums	(If no, explain in Remarks.) tances" present? Yes X No ny answers in Remarks.)
VEGETATION Use Scientific Names of Plants			
	Absolute Dominant	Indicator <u>Dominan</u>	ce Test worksheet:
<u>Tree Stratum</u> (Plot size:)	% Cover Species?	Status	
1. Acer negundo	Y		of Dominant Species
2		That Are	OBL, FACW, or FAC: 2 (A)
3			
4			nber of Dominant
5		Species A	Across All Strata: 2 (B)
6			
7			of Dominant Species
8		That Are	OBL, FACW or FAC 1 (A/B)
	30 = Total Cover		
		Prevalen	ce Index worksheet:
Sapling/Shrub Stratum (Plot size: 15')		Total	% Cover of: Multiply by:
1		OBL Spec	cies 0 x 1 = 0
2.		FACW sp	pecies 110 x 2 = 220
3.			cies 20 x 3 = 60
4.		FACU spo	ecies 10 x 4 = 40
5.		UPL spec	
6.		Column T	
<u> </u>	0 = Total Cover		ence Index = B/A = 2.29
		1 TOVAIN	
Herb Stratum (Plot size: 5' )		Hydroph	ytic Vegetation Indicators:
1. Impatiens capensis	80 Y		Test for Hydrophytic Vegetation
2. Toxicodendron radicans	20 N		ance Test is >50%
3. Urtica dioica	5 N		ence Index is ≤3.0 <sup>1</sup>
4. Alliaria petiolata	5 N		ological Adaptations <sup>1</sup> (Provide supporting
5.			Remarks or on separate sheet)
6			matic Hydrophytic Vegetation <sup>1</sup>
		(Explain	, , , ,
7 8.			rs of hydric soil and wetland hydrology must
			s of nydric soil and wetland nydrology must nt, unless disturbed or problematic
10			ns of Vegetation Strata:
10.		<u> </u>	
12.		Tree - Wo	oody plants 3 in. (7.6 cm) or more in DBH,
13.			s of height.
	110 = Total Cover		shrub - Woody plants less than 3 in. DBH
	1000000		ter than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size: 30')			I herbaceous (non-woody) plants, regardless
			nd woody plants less than 3.28 ft tall
1			ines - All woody vines greater than 3.28 ft in
2		height	mes - All woody villes greater than 5.20 it iii
3			
*·	0 = Total Cover	Hydi	rophytic Yes Y No
		Vegetati	on Present? Yes X No
Remarks: (Include photo numbers here or on separat	e sheet \ Hydronbytic yogotot	ion was present based o	on the dominance and provolence index
tests. All dominant species were OBL, FACW, or FAC		ion was present based o	on the dominance and prevalence muex
10000. 7 th dominiant openies were ODE, I AOVV, OF FAC	<b>,</b> .		

SOIL									Sampling Point: W4
Profile Desci	ription: Describe to	the depth	needed to documer	nt the indic	ator or cor	nfirm the	abse	nce of indicators	.)
Depth	Matrix	-		dox Featu					•
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	_	Texture	Remarks
0-4	5YR 4/1	90	5YR 4/4	10	C	M		loam	
4-18	5YR 7/1	35	5YR 3/2	15	C	М		loam	Co-matrix
	5YR 4/4	35	2.5YR 4/3	15	С	М		loam	Co-matrix
							_		
<sup>1</sup> Type: C=Co	oncentration, D=De	pletion, l	RM=Reduced Matrix	k, CS=Cov	ered or Co	oated Sa	and G	irains. 2	Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:		Stripp	ed Matrix	(S6)				Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol	(A1)			Surface (S					2 cm Muck (A10) (MLRA 147, 148)
Histic Ep	oipedon (A2)		Polyva	alue Belov	v Dark Sur	rface (S8	3) <b>(ML</b>	-RA 147, 148)	Coastal Prairie Redox (A16)
Black Hi	istic (A3)		Thin [	Dark Surfa	ce (S9) (N	ILRA 14	17, 14	8)	(MLRA 147,148)
	en Sulfide (A4)		Loam	y Gleyed N	Matrix (F2)	)		·	Piedmont Floodplain Soils
Stratified	d Layers (A5)			ted Matrix					(F19) <b>(MLRA 136, 147)</b>
_	uck (A10) (LRR N)			k Dark Sur	` '				Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)			Surface (F	6)		,	Other (Explain in Remarks)
	ark Surface (A12)			k Depressi	` '				
	Mucky Mineral (S1)	(LRR N,		_				, MLRA 136)	
147, 148	•				(F13) <b>(ML</b>				<sup>3</sup> Indicators of hydrophytic vegetation and
	Bleyed Matrix (S4)				plain Soils				wetland hydrology must be present,
Sandy F	Redox (S5)		Red F	Parent Mat	erial (F21)	) (MLRA	127,	147)	unless disturbed or problematic.
D ( ) ()					1				
_	Layer (if observed	1):			University	- 0 - 11 D			V N-
Type:					Hyari	c Soil P	resen	it? Yes	No
Depth (i	ncnes):								
Remarks: H	vdric soils were nre	sent at \	W4. Soils had a dep	leted matr	iv				
Tromants. 11	yana sons were pre	Scrit at v	v4. Oolis Had a dep	icted mati	iA.				
HYDROLOG	34								
	drology Indicators	s:							
_			equired; check all th	at apply)		S	Secon	dary Indicators (	minimum of two required)
	Water (A1)		Nater-Stained Leav			_		ace Soil Cracks	• /
	ater Table (A2)		Aquatic Fauna (B13	) ` ´			_	morphic Position	
Saturation	, ,		True Aquatic Plants			X		nage Patterns (E	
_	larks (B1)		Hydrogen Sulfide Od					s Trim Lines (B1	
	nt Deposits (B2)		Oxidized Rhizosphe		ing Roots	(C3)		Season Water T	
Drift Dep	posits (B3)	<u> </u>	Presence of Reduce	d Iron (C4	1)	_		yfish Burrows (C	
Algal Ma	at or Crust (B4)	— <sub>F</sub>	Recent Iron Reducti	on in Tilled	d Soils (C6	G)	Satu	uration Visible or	Aerial Imagery (C9)
Iron Dep	oosits (B5)		Γhin Muck Surface (	C7)			Stur	nted or Stressed	Plants (D1)
Inundati	on Visible on Aeria	(	Other (Explain in Re	marks)			Spa	rsely Vegetated	Concave Surface (B8)
Imagery									
Field Obser									
Surface Wat		Yes _		epth (inch			_		
Water Table		Yes _		epth (inch	_		_	Hydrology	
Saturation F		Yes _	No <u>X</u> D	epth (inch	es):		_	Present?	Yes <u>X</u> No
	pillary fringe)								P. 6
Remarks:	Wetland hydrolog	gy indica	ators were presen	t. Draina	ge patteri	ns and	micro	otopographic re	elief were present within the wetland.
			te map showing sa	impling p					eatures, etc.)
	Vegetation present	[?	Yes X No			he Samı	•		V No.
Hydric Soils			Yes X No			hin a we			No
vveuana Hyd	drology Present?		Yes X No		іт ує	es, optio	ııdı VV	etland Site ID:	
Remarks: /	Evolain alternativ	/A Droce	dures here or in a	congrat	a ranort \	\ \/// m	at thr	ee out of three	wetland criteria. W4 was the
			nd 4. Wetland 4 is				5t till(	ee out of tillee	wedana chtena. W4 Was the
Propresenta	aro data point loi	v v Guai	is t. Wolland + 15	100/011	O Wellal	iid.			
1									

Project/Site: Emberclear Water Main Applicant/Owner: Reading Water Authority Investigator(s): CM, MM	City/Cour	ty: Birdsbo		Sampling Date: 7/20/2016 State: PA Sampling Point: W4 UPL , Township, Range:
Landform (hillslope, terrace, etc.):	terrace		0000011,	Local relief: flat Slope (%): 0
• • • • • • • • • • • • • • • • • • • •	Lat:	40.269209		
Subregion (LRR or MLRA) MLRA 148		40.268398		Long: -75.823176 Datum: WGS 84
Soil Map Unit Name: Birdsboro silt loam, 3 to 8 per	cent slopes (BMB)			NWI classification:
Are climatic/hydrologic conditions on the site typical fare Vegetation X , Soil , or Hydrology Are Vegetation , Soil , or Hydrology	significantly di	sturbed?	Are "No	No (If no, explain in Remarks.)  rmal Circumstances" present? Yes X No  ed, explain any answers in Remarks.)
VEGETATION Use Scientific Names of Plants	Absolute D	ominant l	Indicator	Dominance Test worksheet:
Troc Stratum (Diet aire) 201				Dominance rest worksneet.
Tree Stratum (Plot size: 30')		pecies?	Status	Number of Dentisent On silve
1. Acer negundo	70	<u>Y</u> _	FACW	Number of Dominant Species
2. Juglans nigra	20	Υ	FACU	That Are OBL, FACW, or FAC:3 (A)
3				
4				Total Number of Dominant
5				Species Across All Strata: 6 (B)
6.				
7.				Percent of Dominant Species
8				That Are OBL, FACW or FAC 1 (A/B)
0		<u> </u>		
	<u>90</u> = Total	Cover		
Sapling/Shrub Stratum (Plot size: 15' )				Prevalence Index worksheet:  Total % Cover of: Multiply by:
	40	V		
1. Acer negundo	40		FACW	· — —
2. Lonicera maackii	10	Υ	NI	FACW species 160 x 2 = 320
3				FAC species5 x 3 =15
4				FACU species 55 x 4 = 220
5.				UPL species 10 x 5 = 50
6.			_	Column Totals: 230 (A) 605 (B)
J	50 = Total	Cover		Prevalence Index = B/A = 2.63
Herb Stratum (Plot size: 5')				Hydrophytic Vegetation Indicators:
1. Impatiens capensis	50	Υ	FACW	Rapid Test for Hydrophytic Vegetation
2. Alliaria petiolata	10	N	FACU	Dominance Test is >50%
3. Hesperis matronalis	5	N	FACU	X Prevalence Index is ≤3.0 <sup>1</sup>
4. Persicaria virginiana	5		FAC	<b>—</b>
_		IN	FAC	Morphological Adaptations <sup>1</sup> (Provide supporting
5				data in Remarks or on separate sheet)
6				Problematic Hydrophytic Vegetation <sup>1</sup>
7				(Explain)
8.			-	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
9.				be present, unless disturbed or problematic
10.				Definitions of Vegetation Strata:
11.				
12.				Tree - Woody plants 3 in. (7.6 cm) or more in DBH,
13.				regardless of height.
	70 = Total	Cover		Sapling/shrub - Woody plants less than 3 in. DBH
		COVEI		and greater than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size: 30')				Herb - All herbaceous (non-woody) plants, regardless
1. Celastrus orbiculatus	20	Υ	FACU	of size, and woody plants less than 3.28 ft tall
2.				Woody vines - All woody vines greater than 3.28 ft in
3.			-	height
4.				
T.	20 = Total	Cover		Hydrophytic Yes X No
	<u></u> = rotal	Cover		Vegetation Present? Yes X No
Demonstra (Include Include	(   ( \	41 4 <b>3</b> 6 4 4 4 4 4	DI	
Remarks: (Include photo numbers here or on separa	te sheet.) Vegeta	tion at W4 U	PL met the	e prevalence index test for hydrophytic vegetation.

Type: C=Con Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	Matrix Color (moist) 7.5YR 4/3  centration, D=Departments:	he depth needed to  Color (n 95 7.5YR  Deletion, RM=Reduc	Redox Fe moist) % 4/6 5	atures Type <sup>1</sup> C	Loc <sup>2</sup> Te	exture oam	Re	marks
Type: C=Con Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	Matrix Color (moist) 7.5YR 4/3  centration, D=Departicators: A1)	% Color (n 95 7.5YR	Redox Fe moist) % 4/6 5	atures Type <sup>1</sup> C	Loc <sup>2</sup> Te	exture	Re	marks
Type: C=Con Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	Color (moist) 7.5YR 4/3  7.5YR 4/3  centration, D=Departicators: A1)	95 7.5YR	noist) % 4/6 5	Type <sup>1</sup> C			Re	marks
0-8  Type: C=Con  Hydric Soil In  Histosol (A  Histic Epip  Black Hist  Hydrogen	7.5YR 4/3  centration, D=Department of the contraction of the contract	95 7.5YR	2 4/6 5	C			Re	marks
Type: C=Con  Hydric Soil In  Histosol (A  Histic Epip  Black Hist  Hydrogen	centration, D=Depadicators:		ced Matrix, CS=0		PL I	oam		
Type: C=Con  Hydric Soil In  Histosol (A  Histic Epip  Black Hist  Hydrogen	centration, D=Depadicators:		ced Matrix, CS=0					
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	oletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	pletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	pletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	oletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	pletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)	oletion, RM=Reduc		Covered or Coo				
Hydric Soil In Histosol (A Histic Epip Black Hist Hydrogen	ndicators: A1)				ted Sand Grains	<sup>2</sup> Locat	ion: DI -Doro I	ining, M=Matrix.
Histosol (A Histic Epip Black Hist Hydrogen	<b>A1</b> )	_			leu Sanu Grains			
Histic Epip Black Hist Hydrogen	,		Stripped Mat	, ,				natic Hydric Soils
Black Hist Hydrogen	pedon (A2)		Dark Surface	(S7)		2	cm Muck (A10)	(MLRA 147, 148)
Black Hist Hydrogen	` '		Polyvalue Be	low Dark Surfa	ce (S8) (MLRA 1	47, 148)	Coastal Prairie Re	edox (A16)
Hydrogen	ic (A3)			rface (S9) <b>(ML</b> I			MLRA 147,148)	, ,
		_	Loamy Gleye		,,	•		
		_					Piedmont Floodpl	
	Layers (A5)	_	Depleted Mat				F19) <b>(MLRA 136</b>	
2 cm Muc	k (A10) <b>(LRR N)</b>		Redox Dark S	Surface (F6)		\	ery Shallow Dar/	k Surface (TF12)
Depleted !	Below Dark Surfac	ce (A11)	Depleted Dar	k Surface (F6)			Other (Explain in	Remarks)
	k Surface (A12)		Redox Depre					•
		IDD NI MIDA			12) <b>(LRR N, MLF</b>	2Λ 136\		
	icky Mineral (S1) (	LKK N, WILKA				_		
147, 148)		_		ce (F13) (MLR	-			ohytic vegetation an
Sandy Gle	eyed Matrix (S4)	_	Piedmont Flo	odplain Soils (F	F19) (MLRA 148)	we	land hydrology n	nust be present,
Sandy Re	dox (S5)		Red Parent N	/laterial (F21) (I	<b>MLRA 127, 147)</b>	unl	ess disturbed or	problematic.
_			_	, , ,				
Postrictivo I	ayer (if observed)	١.						
_	• •					.,		
Type:		roots		Hydric S	Soil Present?	Yes	No X	
Depth (inc	ches):	8						
HYDROLOGY	,							
	rology Indicators							
orimary indica	ators (minimum of	one is required; ch	eck all that apply	y)	Secondary I	ndicators (minim		
Surface W	/ater (A1)	Water-Stair	ned Leaves (B9)		Surface S	Soil Cracks (B6)	Shallow	Aquitard (D3)
High Wate	er Table (A2)	Aquatic Fau	una (B13)		X Geomorp	hic Position (D2)	Microtor	oographic Relief (D4
Saturation			ic Plants (B14)			Patterns (B10)		eutral Test (D5)
	` '			`		, ,		dulai Test (DS)
Water Mai	` '		Sulfide Odor (C1			n Lines (B16)		
Sediment	Deposits (B2)		hizospheres on I	-	3)Dry Seas	on Water Table (	C2)	
Drift Depo	sits (B3)	Presence of	f Reduced Iron (	(C4)	Crayfish I	Burrows (C8)		
	or Crust (B4)		n Reduction in Ti	. ,		n Visible on Aeria	l Imagery (C9)	
Iron Depo			Surface (C7)	(00)		or Stressed Plants		
	, ,							
	Visible on Aerial	Other (Expl	lain in Remarks)		Sparsely	Vegetated Conca	ave Surface (bo)	
Imagery (I								
Field Observa	ations:							
Surface Water	r Present?	Yes No	X Depth (in	iches):	0			
Water Table F	Present?	Yes No	X Depth (in	iches):	0	Hydrology		
		Yes No			0	Present?	Yes N	No X
		163 110	Z Deptil (iii			r resent:	163	<u> </u>
Saturation Pre								
Saturation Pre (includes capil	llary fringe)							
Saturation Pre (includes capil	llary fringe)	y indicators were	e not present.					
Saturation Pre (includes capil	llary fringe)	y indicators were	e not present.					
Saturation Pre (includes capil	llary fringe)	y indicators were	e not present.					
Saturation Pre (includes capil	llary fringe)	y indicators were	e not present.					
Saturation Pre (includes capil Remarks: W	llary fringe) /etland hydrolog							
Saturation Pre (includes capil Remarks: W	llary fringe) /etland hydrolog F FINDINGS At	tach site map sho	owing sampling			nportant feature	s, etc.)	
Saturation Pre (includes capil Remarks: W	llary fringe) /etland hydrolog	tach site map sho			ns, transects, in Sample Area	nportant feature	s, etc.)	
Saturation Pre (includes capil Remarks: W	llary fringe) /etland hydrolog  F FINDINGS At	tach site map sho	owing sampling	Is the		nportant feature Yes	s, etc.)	X
Saturation Pre (includes capil Remarks: W SUMMARY O Hydrophytic V Hydric Soils P	llary fringe) /etland hydrolog /F FINDINGS At regetation present*	ttach site map sho	owing sampling X No No X	Is the within	Sample Area a wetland?	Yes		X
Saturation Pre (includes capil Remarks: W SUMMARY O Hydrophytic V Hydric Soils P	llary fringe) /etland hydrolog  F FINDINGS At	ttach site map sho	owing sampling	Is the within	Sample Area	Yes		X
Saturation Pre (includes capil Remarks: W SUMMARY O Hydrophytic V Hydric Soils P Wetland Hydro	llary fringe)  /etland hydrolog  /F FINDINGS At /egetation present/ resent? ology Present?	ttach site map sho ? Yes	owing sampling X No No X No X	Is the within If yes,	Sample Area a wetland? optional Wetland	Yesd Site ID:	No	
Saturation Pre (includes capil Remarks: W SUMMARY O Hydrophytic V Hydric Soils P Wetland Hydro Remarks: (E	/etland hydrolog /etland hydrolog /F FINDINGS At /egetation present* /resent? /ology Present? xplain alternative	ttach site map sho ? Yes Yes Yes e procedures her	owing sampling X No No X No X	Is the within If yes,	Sample Area a wetland? optional Wetland	Yesd Site ID:	No	
Saturation Pre (includes capil Remarks: W SUMMARY O Hydrophytic V Hydric Soils P Wetland Hydro Remarks: (E	llary fringe)  /etland hydrolog  /F FINDINGS At /egetation present/ resent? ology Present?	ttach site map sho ? Yes Yes Yes e procedures her	owing sampling X No No X No X	Is the within If yes,	Sample Area a wetland? optional Wetland	Yesd Site ID:	No	

Project/Site: Emberclear Water Main	City/County: Robesc		Sampling Date:	
Applicant/Owner: Reading Water Authority		State:		W5
Investigator(s): CM, MM			nship, Range:	
Landform (hillslope, terrace, etc.):				Slope (%): 0
Subregion (LRR or MLRA) MLRA 148		Long:	-75.83523	Datum: WGS 84
Soil Map Unit Name: Penn chanery silt loam, 3 to 8	percent slopes (PeB)		NWI classification:	
Are climatic/hydrologic conditions on the site typical f Are Vegetation , Soil , or Hydrology Are Vegetation , Soil , or Hydrology	significantly disturbed?	Are "Normal 0	No (If no, explain in Re Circumstances" present? xplain any answers in Remarks	Yes X No
VEGETATION Use Scientific Names of Plants				
Trace Observations (Districtions 201			Oominance Test worksheet:	
<u>Tree Stratum</u> (Plot size:)  1 2			lumber of Dominant Species hat Are OBL, FACW, or FAC:	(A)
3	= = :		otal Number of Dominant species Across All Strata:	2 (B)
6. 7. 8.			Percent of Dominant Species That Are OBL, FACW or FAC	1.0 (A/B)
				_
Sapling/Shrub Stratum         (Plot size:15')           1		O	Trevalence Index worksheet:           Total % Cover of:         No. 1           DBL Species         x 1           ACW species         100         x 2           AC species         x 3           ACU species         x 4	Multiply by: $1 = 0$ $2 = 200$ $3 = 0$
5.			JPL species x 5	
6.			Column Totals: 100 (A)	
	0 = Total Cover	_	Prevalence Index = B/A =	`
Herb Stratum       (Plot size:       5'       )         1. Pharlis arundinacea         2. Impatiens capensis         3.         4.         5.         6.         7.	80 Y 20 Y	FACW X	Rapid Test for Hydrophytic Volume Test is >50%  Dominance Test is >50%  Prevalence Index is ≤3.0¹  Morphological Adaptations¹ (I data in Remarks or on separa Problematic Hydrophytic Veg (Explain)	egetation  Provide supporting ate sheet)
8.			ndicators of hydric soil and we	
9			e present, unless disturbed or Definitions of Vegetation Stra	
10. 11.	<del></del>	<sup>6</sup>	elimitions of vegetation Stra	ıla.
12.			ree - Woody plants 3 in. (7.6 c	cm) or more in DBH,
13.			egardless of height.	,
	100 = Total Cover		Sapling/shrub - Woody plants	
			nd greater than 3.28 ft (1m) ta	
Woody Vine Stratum (Plot size: 30')			<b>lerb</b> - All herbaceous (non-wood f size, and woody plants less t	• / •
1			Voody vines - All woody vines	
2			eight	greater than 5.20 it in
3. 4.				
	0 = Total Cover		Hydrophytic /egetation Present?  Yes	No
Remarks: (Include photo numbers here or on separate		tion was present	t based on the dominance and	I prevalence index
tests. Both dominant species were OBL, FACW, or F	AC.			

SOIL								Sampling Point:	W5
Profile Desci	ription: Describe to t	he depth	needed to docun	nent the indi	cator or co	nfirm the	absence of indicato	ers.)	
Depth	Matrix	-		Redox Feat	ures			•	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Re	marks
0-24	7.5YR 2/1	85	7.5YR 4/4	15	C	M	muck	110	marito
02.	1.011(2)1		7.011( 1/1				maon	_	
								_	
							<u> </u>		
								_	
								_	
1- 0.0								21 (* 12) 12	· ·
	oncentration, D=De	pletion, R				coated Sa	and Grains.	<sup>2</sup> Location: PL=Pore L	
Hydric Soil				ipped Matrix	` '			Indicators for Problem	-
Histosol	` '			rk Surface (	,				(MLRA 147, 148)
	oipedon (A2)						3) <b>(MLRA 147</b> , 148)		, ,
_	istic (A3)			n Dark Surfa			7, 148)	(MLRA 147,148)	
_ ` `	en Sulfide (A4)			amy Gleyed		2)		Piedmont Floodp	
	d Layers (A5)			pleted Matri				(F19) <b>(MLRA 136</b>	
	uck (A10) (LRR N)			dox Dark Su	` ,			Very Shallow Dar	
	d Below Dark Surfa	ce (A11)		pleted Dark	`	<del>-</del> 6)		Other (Explain in	Remarks)
Thick Da	ark Surface (A12)			dox Depress					
Sandy N	Mucky Mineral (S1)	(LRR N,	MLRAIron	n-Manganes	e Masses	(F12) <b>(L</b> I	RR N, MLRA 136)		
147, 148	,		Um	bric Surface	e (F13) <b>(M</b> I	LRA 136	, 122)	<sup>3</sup> Indicators of hydro	phytic vegetation and
Sandy G	Sleyed Matrix (S4)		Pie	dmont Floor	dplain Soils	s (F19) (N	MLRA 148)	wetland hydrology r	
Sandy F	Redox (S5)		Red	d Parent Ma	iterial (F21	) (MLRA	127, 147)	unless disturbed or	problematic.
Restrictive	Layer (if observed	l):							
Type:					Hydri	ic Soil Pr	resent? Yes	s X No	
Depth (i	nches):								
	•								
Remarks: H	ydric soils were pre	sent at W	/5. The soil profi	le consisted	of muck.				
HYDROLOG	ΒΥ								
Wetland Hy	drology Indicators	s:							
	cators (minimum of		quired; check all	I that apply)		S	econdary Indicators	s (minimum of two require	ed)
	Water (A1)		/ater-Stained Le				Surface Soil Crack		Aquitard (D3)
	ater Table (A2)		quatic Fauna (B	, ,			Geomorphic Posit	` ' ' <del>-</del>	pographic Relief (D4)
X Saturation			rue Aquatic Plar			X	_ Drainage Patterns	· · · · —	eutral Test (D5)
_	larks (B1)		lydrogen Sulfide				Moss Trim Lines (		(= -)
	nt Deposits (B2)		xidized Rhizosp		vina Roots	(C3)	Dry Season Water		
_	posits (B3)		resence of Redu		_	(/	Crayfish Burrows		
	at or Crust (B4)		ecent Iron Redu			6)		on Aerial Imagery (C9)	
	posits (B5)		hin Muck Surfac		,a 00113 (01	_	Stunted or Stresse		
	on Visible on Aerial		other (Explain in	. ,		_		ed Concave Surface (B8)	ı
Imagery		<b>—</b> ~	anor (Explain in	rtomanto,		_	_oparoory regulate	ou concavo cunaco (Do)	
Field Obser									
Surface Wat		Yes	X No	Depth (incl	nes).	4			
Water Table			X No —	Depth (incl	_	0	- Hydrolo	av.	
Saturation F		_	X No —	Depth (incl	_	0	Presen		No
	pillary fringe)	103	<u> </u>	Deptil (illei			-   '''	103	···
	Wetland hydrolog	ny indica	tore were pres	ant Surfac	na watar v	was at a	denth of 1 inches	`	
ixemarks.	vvetiana nyarolog	jy iriuica	itors were pres	ent. Sunac	e water v	was at a	depth of 4 mones	).	
	OF FINDINGS A							features, etc.)	
	Vegetation present	:?	Yes X N			the Samp			
Hydric Soils			Yes X N			hin a we		s X No	
Wetland Hyd	drology Present?		Yes X N	lo	If y	es, optior	nal Wetland Site ID:		
	·					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
				-	-		et three out of thre	ee wetland criteria. W5	was the
representa	tive data point for	Wetlan	d 5. Wetland 5	ıs 100% P	'EM wetla	and.			
1									

Project/Site: Emberclear Water Machine Applicant/Owner: Reading Water Investigator(s): CM, MM		Ci	ty/County:	Robeso		State: <u>PA</u> n, Township, Ran	Sampling Date: Sampling Point:		
Landform (hillslope, terrace, etc.):		ter	race			Local relief:	flat	Slope (%):	5
Subregion (LRR or MLRA)	ΜΙ Δ 1/18	La		.27165			75.835157	Datum: WGS	
Soil Map Unit Name: Penn channe						Long	VI classification:		04
Son Map Offic Name. Ferri Charine	ery siit ioarri, 5 to	o percent s	siopes (Feb	)			/VI Classification.	INA	
Are climatic/hydrologic conditions or Are Vegetation , Soil Are Vegetation , Soil	, or Hydrology _ , or Hydrology _	signific	antly disturb	ed?	Are "N	ormal Circumstar	(If no, explain in Rences" present? answers in Remark	Yes X No	_
VEGETATION Use Scientific Nam	nes of Plants	A1 1 1				<b>.</b> .	<del></del>		
T 01 1 (D) 1 :	001	Absolute	Domir		Indicator	Dominance	e Test worksheet:		
Tree Stratum (Plot size:		% Cover	Speci	es?	Status				
1							Dominant Species		
2						That Are Of	BL, FACW, or FAC:	2 (A)	
3.						_			
4.						Total Numb	er of Dominant		
5.						Species Acr	ross All Strata:	3 (B)	
6.						•			
7.						Percent of D	Dominant Species		
8							BL, FACW or FAC	0.67 (A/B)	
o			- Total Cov			•	,	0.07 (708)	
			= Total Cov	er					-
						Prevalence	Index worksheet:	<del>-</del>	
<u>Sapling/Shrub Stratum</u> (Plot size:	15')					Total %	Cover of:	Multiply by:	
1						OBL Specie		=0	
2						FACW spec	cies <u>35</u> x 2	2 =70	
3.						FAC specie	s 0 x 3	3 = 0	
4.						FACU spec	ies 10 x 4	1 = 40	
5.						UPL species			
6						Column Tot			
o		0	= Total Cov	er			ce Index = B/A =		
Herb Stratum (Plot size:	5' )					Hydrophyti	ic Vegetation Indic	ators:	
1. Securigera varia		30	Υ		UPL	Rapid Tes	st for Hydrophytic V	egetation	
2. Pharlaris arundinacea		20	Y		FACW	X Dominano	ce Test is >50%		
3. Lytrum salicaria		15	Y		FACW		ce Index is ≤3.0 <sup>1</sup>		
4. Verbascum thapsus		5	N		FACU	·   —	gical Adaptations <sup>1</sup> (	Provide supporting	a
5. Cirsium arvens		5	N		FACU		emarks or on separa		9
					17100	·	itic Hydrophytic Veg	4 '	
_						—	ilic riyuropriyiic veg	Clation	
7						(Explain)			
8							of hydric soil and we		ust
9.							unless disturbed or		
10						Definitions	of Vegetation Stra	<u>ita:</u>	
11						.   _			
12							dy plants 3 in. (7.6 d	cm) or more in DBI	Ⅎ,
13.						regardless of	of height.		
		75	= Total Cov	er			rub - Woody plants		Н
						and greater	than 3.28 ft (1m) ta	II.	
Woody Vine Stratum (Plot size:	30'					<b>Herb</b> - All h	erbaceous (non-wo	ody) plants, regard	lless
							woody plants less t	,,,	
1.						.	es - All woody vines		ft in
2						height	SS - All WOOdy VIIIes	gicator triair 5.20	14 111
3.						Height			
4		0	= Total Cov	er		Hydro <sub>l</sub> Vegetation		X No	_
						1			
Remarks: (Include photo numbers h	ere or on separa	ite sheet.) \	√egetation a	at W5 UI	PL met th	ne dominant test f	for hydrophytic vege	etation.	

Profile Descri Depth (inches) 0-8	iption: Describe to t Matrix	he depth needed				Sampling		
(inches)	Matrix	=	d to document the in	dicator or confire	n the absence of in	dicators.)		
(inches)			Redox Fe			,		
	Color (moist)	% Colo	or (moist) %		oc² Textu	ıre	Remarks	
	7.5YR 4/3	100	, (moiot) , , ,	1,700	loan		rocky	•
	7.0111 1/0				1001	···	roony	
			<u> </u>					
			<del></del>			<del></del>		
1- 00						2,	DI D	
		oletion, RM=Re	duced Matrix, CS=0		ed Sand Grains.		: PL=Pore Lining	
Hydric Soil I			Stripped Mat	, ,			s for Problematic	-
Histosol	` '		Dark Surface	, ,			n Muck (A10) (MLR	-
	pipedon (A2)				e (S8) <b>(MLRA 147</b>	, <b>148)</b> Coa	stal Prairie Redox (	A16)
Black His				rface (S9) (MLR	A 147, 148)	(ML	RA 147,148)	
	n Sulfide (A4)		Loamy Gleye				mont Floodplain So	
	l Layers (A5)		Depleted Mar			(F19	) (MLRA 136, 147)	)
2 cm Mu	ck (A10) (LRR N)		Redox Dark S	Surface (F6)		Very	Shallow Dark Surf	ace (TF12)
Depleted	Below Dark Surfac	ce (A11)	Depleted Dar	rk Surface (F6)		Othe	er (Explain in Rema	rks)
Thick Da	rk Surface (A12)		Redox Depre	essions (F8)				
Sandy M	lucky Mineral (S1) (	LRR N, MLRA	Iron-Mangan	ese Masses (F12	2) (LRR N, MLRA	136)		
147, 148	,		Umbric Surfa	ce (F13) (MLRA	136, 122)	<sup>3</sup> Indica	tors of hydrophytic	vegetation an
Sandy G	leyed Matrix (S4)		Piedmont Flo	odplain Soils (F	19) (MLRA 148)		d hydrology must b	-
Sandy R	edox (S5)		Red Parent N	Material (F21) (M	ILRA 127, 147)		disturbed or proble	
			<del></del>					
Restrictive I	Layer (if observed	):						
Type:	ro	ck		Hydric So	oil Present?	Yes N	o <u>X</u>	
Depth (in	nches):	8	<del></del>					
	,							
Remarks: H	ydric soil indicators	were not prese	ent.	•				
HYDROLOG	Υ							
Wetland Hv	drology Indicators	;;						
			; check all that apply	v)	Secondary Indi	cators (minimum	of two required)	
	Water (A1)		Stained Leaves (B9)		Surface Soil	<u> </u>	Shallow Aquit	ard (D3)
High Wa	ter Table (A2)		Fauna (B13)			Position (D2)	Microtopograp	
Saturatio			uatic Plants (B14)		Drainage Pa		FAC-Neutral	
	arks (B1)		en Sulfide Odor (C1	)	Moss Trim L	, ,		1001 (20)
	nt Deposits (B2)		d Rhizospheres on I			Water Table (C2)		
	osits (B3)		ce of Reduced Iron (	-	Crayfish Bur	` '		
טוווו טפט	, ,		Iron Reduction in Ti			isible on Aerial In	2000r/ (CO)	
				iled Solis (Cb)			, ,	
Algal Ma			ıck Surface (C7) Explain in Remarks)			tressed Plants (D	,	
Algal Ma Iron Dep	, ,				Sparsely veg	getated Concave	Surface (Do)	
Algal Ma Iron Dep Inundatio	on Visible on Aerial		=xpiaiii iii rtomanto/		<u> </u>	_	` ,	
Algal Ma Iron Dep Inundatio Imagery	on Visible on Aerial (B7)							
Algal Ma Iron Dep Inundatio Imagery Field Observ	on Visible on Aerial (B7) vations:	Other (E					. ,	_
Algal Ma Iron Dep Inundatio Imagery Field Observ Surface Wate	on Visible on Aerial (B7) vations: er Present?	Other (E	No X Depth (in				. ,	
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Water Water Table	on Visible on Aerial (B7) vations: er Present? Present?	Other (E	No X Depth (in X) Depth (in	iches):		drology		
Algal Ma Iron Dep Inundation Imagery Field Obsert Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent?	Other (E	No X Depth (in	iches):		drology	/es No	<u>×_</u>
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe)	Yes N Yes N	No X Depth (in No X Depth (in	iches):		drology		<u>X</u>
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent?	Yes N Yes N	No X Depth (in No X Depth (in	iches):		drology		X
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe)	Yes N Yes N	No X Depth (in No X Depth (in	iches):		drology		<u>X</u>
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe)	Yes N Yes N	No X Depth (in No X Depth (in	iches):		drology		X
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Pi	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe)	Yes N Yes N	No X Depth (in No X Depth (in	iches):		drology		X
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Wate Water Table Saturation Proceeding (includes cap Remarks: V	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe) Wetland hydrolog	Yes N Yes N Yes N yes N y indicators w	No X Depth (in No X Depth (in	nches):	Hy	drology resent?	/es No)	X
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Water Table Saturation Profice (includes cap Remarks: V	on Visible on Aerial (B7) vations: er Present? Present? resent? pillary fringe) Wetland hydrolog	Yes N Yes N Yes N y indicators w	No X Depth (in No X Depth (in vere not present.	nches):  point location	Hy	drology resent?	/es No)	X
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Water Table Saturation Profice (includes cap Remarks: V	on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS Ar	Yes N Yes N Yes N y indicators w	No X Depth (in No X Depth (in vere not present.	g point locations	Hy Pr	drology resent?	/es No)	
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Water Water Table Saturation Proposition (includes cap Remarks: \)  SUMMARY ( Hydrophytic \) Hydric Soils	on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS Ar Vegetation present Present?	Yes N Yes N Yes N y indicators w ttach site map ? Yes	No X Depth (in No X Depth (in vere not present.	point locations Is the S within	Hy Pr s, transects, impo Sample Area a wetland?	drology resent?	/es No tc.)	
Algal Ma Iron Dep Inundation Imagery Field Obser Surface Water Water Table Saturation Proposition (includes cap Remarks: \)  SUMMARY ( Hydrophytic \) Hydric Soils	on Visible on Aerial (B7) vations: er Present? Present? resent? wetland hydrolog  OF FINDINGS Ar	Yes N Yes N Yes N y indicators w  ttach site map ? Yes Yes	No X Depth (in No X Depth (in Vo X Depth (in Vo X Depth (in Vorere not present.	point locations Is the S within	Hy Pr s, transects, impo	drology resent?	/es No tc.)	
Algal Ma Iron Dep Inundation Imagery Field Obsert Surface Water Table Saturation Proposition of the company of	on Visible on Aerial (B7) vations: er Present? Present? resent? oillary fringe) Wetland hydrolog  OF FINDINGS Ar Vegetation present Present? Irology Present?	Yes N Yes N Yes N yes N y indicators w  ttach site map ? Yes Yes Yes Yes	No X Depth (in No X No X No X Depth (in No X No X No X Depth (in N	p point locations Is the S within If yes, o	s, transects, imposample Area a wetland? optional Wetland S	ortant features, e	/es No tc.)	
Algal Ma Iron Dep Inundation Imagery Field Observ Surface Water Table Saturation Pr (includes cap Remarks: \)  SUMMARY (I) Hydrophytic \( \) Hydric Soils \( \) Wetland Hyd  Remarks: (I)	on Visible on Aerial (B7) vations: er Present? Present? resent? oillary fringe) Wetland hydrolog OF FINDINGS Ai Vegetation present Present? Irology Present? Explain alternativ	Yes N Yes N Yes N yes N y indicators w  ttach site map ? Yes Yes Yes Yes Yes Yes Yes Yes	No X Depth (in No X Depth (in Vo X Depth (in Vo X Depth (in Vorere not present.	g point locations Is the S within If yes, o	s, transects, imposample Area a wetland? optional Wetland S	ortant features, e  Yes ite ID:	/es No tc.)  NoX	ough W5 U



# **ATTACHMENT I**

Preparedness, Prevention and Contingency (PPC) Plan

# **Preparedness, Prevention and Contingency Plan**

This plan is part of the NPDES permit application for the discharge of stormwater associated with construction activities and the related Erosion and Sediment Control Plan. It is required to comply with Chapter 101.3(b) of the Rules and Regulations of the Department of Environmental Protection, and Conditions under the NPDES permit.

- 1. Name of Permittee: <u>Birdsboro Power LLC</u>
- 2. Name of Project: RAWA/Birdsboro Power, LLC Water Main
- 3. Project Location: County: Berks Municipality: Boro. of Birdsboro & Robeson Twp.
- 4. List names and telephone numbers of responsible company officials to be contacted in case of emergency.

<u>Name</u>	Day Phone #	Night Phone #
Robert Haley	(860) 301-2620	(860) 301-2620

5. List name and telephone number of the following:

County emergency management: <u>Brian Gottschall – (610) 374-4800</u>

Nearest fire department: Birdsboro-Union Fire Co. – (610) 582-0058

Nearest hospital: Reading Hospital – (215) 345-2200

6. Notification to the following agencies must be made immediately in the event of a spill of any polluting substances.

DEP Regional Office: <u>DEP Southcentral Regional Office (Harrisburg, PA) 717-705-4700</u> PA Fish and Boat Commission: 717-705-7800

7. List Name and telephone number of any downstream water users including drinking water supplies, industrial intakes and agricultural uses. It is the permittee's/co-permittees responsibility to immediately contact water users if polluting material is released from the site.

\_\_\_\_\_

8. General Description of Construction Activity.

Construction of the water system site work as shown on the attached plans.

SEE ATTACHED DRAWINGS

A.	Pesticides and	herbicides*	
<u>Name</u>			Quantity (pounds or gallons)
None			
В.	Fertilizer*		
<u>Name</u>			Quantity (pounds or gallons)
None			
C.		ls such as paints, de	etergents, acids for cleaning, solvent ds.*
C.			
Name These	additives, conc	rete curing compound	ds.*  Quantity (pounds or gallons)  needed. It is not anticipated that
Name These an inve	chemicals will lentory of these	rete curing compound be brought on site as materials will be store	ds.*  Quantity (pounds or gallons)  needed. It is not anticipated that
Name These an inve	chemicals will lentory of these slisted under A	rete curing compound be brought on site as materials will be store	Quantity (pounds or gallons)  needed. It is not anticipated that ed on site.

9.

Note: We do not expect to have any gasoline, diesel fuel, lubricating oils, etc. stored onsite. The heavy equipment will be serviced by fuel trucks on as needed basis. The fueling operations will not occur near any streams, drainageways or storm sewers. These operations will occur with proper supervision. It is understood that any liquid stored onsite must be kept within a diked area capable of holding 110% of the largest container's capacity. The dike will be an impervious barrier of clay, concrete or synthetic membrane liner.

10. List types and quantities of absorbent materials used for spill mitigation that are stored on premises. Quantities of absorbent booms and pads and other equipment needed to contain spills and begin cleanup should be kept at the site. List the types and quantities each.

A miscellaneous group of absorbent socks, mat pads, barrel top pads of various sizes will be kept onsite.

- 11. If any concrete work or paving will occur, steps must be taken to assure that no pollution occurs from cleanup operations. Mixer truck washings will be discharged onsite but shall be contained to a specific area that will prevent any migration of these materials into streams, drainage ways or storm sewers.
- 12. Particular attention should be given to the construction and operation of the equipment refueling area. It should be placed away from streams protected by a containment dike and secured from vandalism. Operators should be present during refueling and be familiar with response procedures in the event of a spill.
- 13. The site should be inspected daily for evidence of existing or potential spills or leaks, vandalism, and the condition of cleanup materials.
- Material Management Practices.

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

# A. Good Housekeeping:

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough products required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
- Additionally, at least once per month, our safety consultant will inspect premises for conformance to all OSHA regulations.

#### B. Hazardous Products:

- These practices are used to reduce the risks associated with hazardous materials.
- Products will be kept in original containers unless they are not resealable.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed.

# 15. Product Specific Practices

The following product specific practices will be followed on site:

### A. Petroleum Products:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

## B. Fertilizers:

Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

### C. Chemical/Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be poorly disposed of according to manufacturer's instructions or State and local requirements.

#### D. Concrete Trucks:

Concrete trucks washing will be discharged onsite but shall be contained to a specific area that will prevent any migration of these materials into streams, drainage ways or storm sewers. Once hardened, excess concrete and washing discharge shall be removed as required by material disposal and recycling requirements.

# 16. Spill Prevention Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage closet are onsite in the field trailer. Equipment and materials will not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent, responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.

# 17. Security

All materials requiring security are to be kept and locked within secure containers stored in the designated construction staging areas.

18. All construction and site activities shall be in accordance with the specifications and plans submitted for approval by the appropriate governmental authorities. Activities shall also be monitored and inspected by the Township Engineer, inspection agencies, and the governing municipal authorities.