WETLAND AND WATERWAY INVESTIGATION REPORT

ECCLESTON MITIGATION SITE

Baltimore County, Maryland

JMT Project Number 17-10977-001

Submitted to:
NextEra Energy Marketing, LLC

July 2019

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1.0 INTRODUCTION

NextEra Energy Marketing, LLC is proposing to create a wetland and stream mitigation site at the Eccleston Property near Stevenson, Baltimore County, Maryland. To support this effort, Johnson, Mirmiran & Thompson (JMT) performed a wetland and waterway investigation to identify environmental resources that could be impacted within the Study Area.

The Study Area is approximately 55 acres and is located southwest of the intersection of Greenspring Valley Road and Park Heights Avenue (Figure 1). The land cover type consists of agricultural and forested land; narrow corridors of early- to mid-secessional deciduous forests are located along Jones Falls and its unnamed tributaries, with agricultural fields to either side. Surrounding development is zoned as low- or very low-density residential.

The Study Area is within the Eastern Mountains and Piedmont Physiographic Province. It lies in the Maryland Department of the Environment (MDE) 8-digit Jones Falls Watershed (#02130904; MDE, 2005) and the U.S. Geological Survey (USGS) Watershed Boundary Dataset 8-digit Gunpowder-Patapsco Watershed (#02060003; USGS, 2012).

A Forest Stand Delineation and a Specimen Tree Survey were also completed for the Study Area. Details regarding forests and trees are available in the Forest Stand Delineation Report.

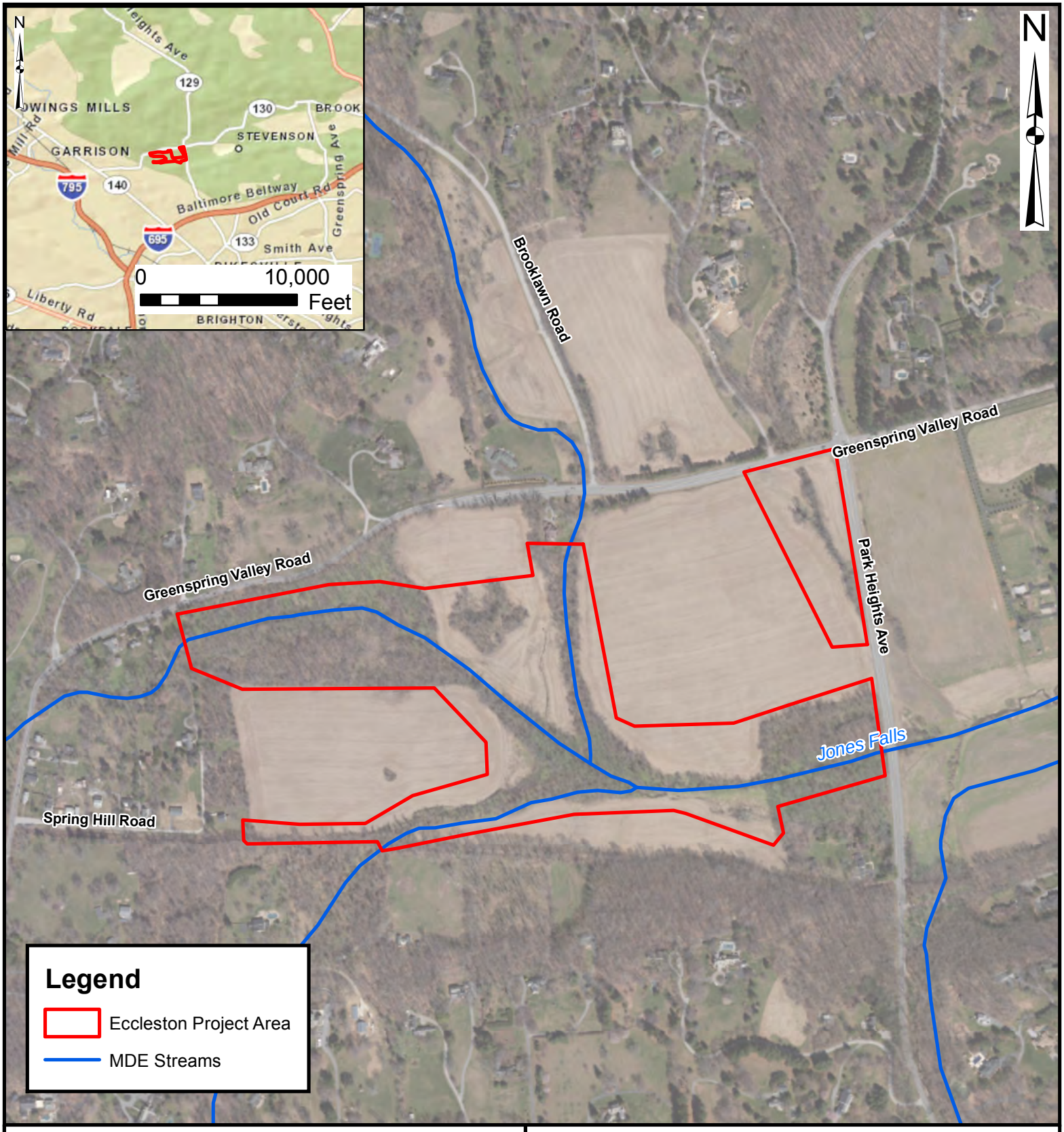
2.0 METHODOLOGY

2.1 PUBLISHED INFORMATION

JMT reviewed several background data sources prior to completing the field work. These sources included topographic maps, soil survey maps, National Wetland Inventory (NWI) and Maryland Department of Natural Resources (DNR) mapped wetlands, MDE mapped streams, Federal Emergency Management Agency (FEMA) floodplain maps, and recent aerial photographs. See **Section 3.1**.

2.2 AGENCY COORDINATION

JMT coordinated with Maryland DNR, U.S. Fish and Wildlife Service (USFWS), and Maryland Historic Trust (MHT) to determine whether state-protected species, federal-protected species, and/or known historical or archaeological sites are present within the Study Area. See **Section 3.2** for results of this coordination.



0 300 600 1,200 Feet

1 " = 600 '

SOURCE: MD IMAP, MDE

FIGURE 1: VICINITY MAP

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

DATE: JULY 2019

2.3 FIELD INVESTIGATION

A field investigation was conducted to delineate potentially jurisdictional waters of the United States (WUS), including wetlands and waterways, within the Study Area. The wetland delineation was performed according to the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0,* (US Army Corps of Engineers, 2012*)*. The *Corps of Engineers Wetland Delineation Manual* states three criteria (wetland vegetation, wetland soils, and wetland hydrology) must be present for an area to qualify as a wetland, unless the area is significantly disturbed (atypical situation) or is considered a problem area (e.g., seasonally ponded soils). If the area is significantly disturbed or a problem area, then only two parameters must be evident to classify an area as a wetland. Each wetland was classified into system, subsystem, class and subclass according to the *Classification of Wetlands and Deep Water Habitats of the United States* (Cowardin *et al.*, 1979).

Wetland (hydrophytic) vegetation was determined using the USACE National Wetland Plant List (NWPL), (Lichvar *et al.*, 2016). This document assigns a wetland indicator status to plants based on how frequently they occur in wetlands. The NWPL wetland indicator status and definitions are listed in **Table 1**.

Table 1: National Wetland Plant List Indicator Status Groups

Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Occur in wetlands or non-wetlands
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands
Obligate Upland (UPL)	Almost never occur in wetlands

Source: Lichvar *et al.*, 2016

In order to delineate wetland boundaries, samples were taken periodically using an open-faced auger. Soil samples were collected at each wetland and upland sample point, and soil colors were recorded in the field using a Munsell soil color chart (Munsell Color, 2010).

Wetland and WUS boundaries were flagged in the field and documented using a Trimble® global positioning system (GPS) capable of sub-meter accuracy. WUS boundaries were delineated using top of bank.

A functional assessment was completed for each of the delineated wetlands using *The Highway Methodology Workbook Supplement: Wetland Functions and Values* and *Wetland Function Value Evaluation Form* (USACE, 1999).

3.0 FINDINGS

3.1 PUBLISHED INFORMATION

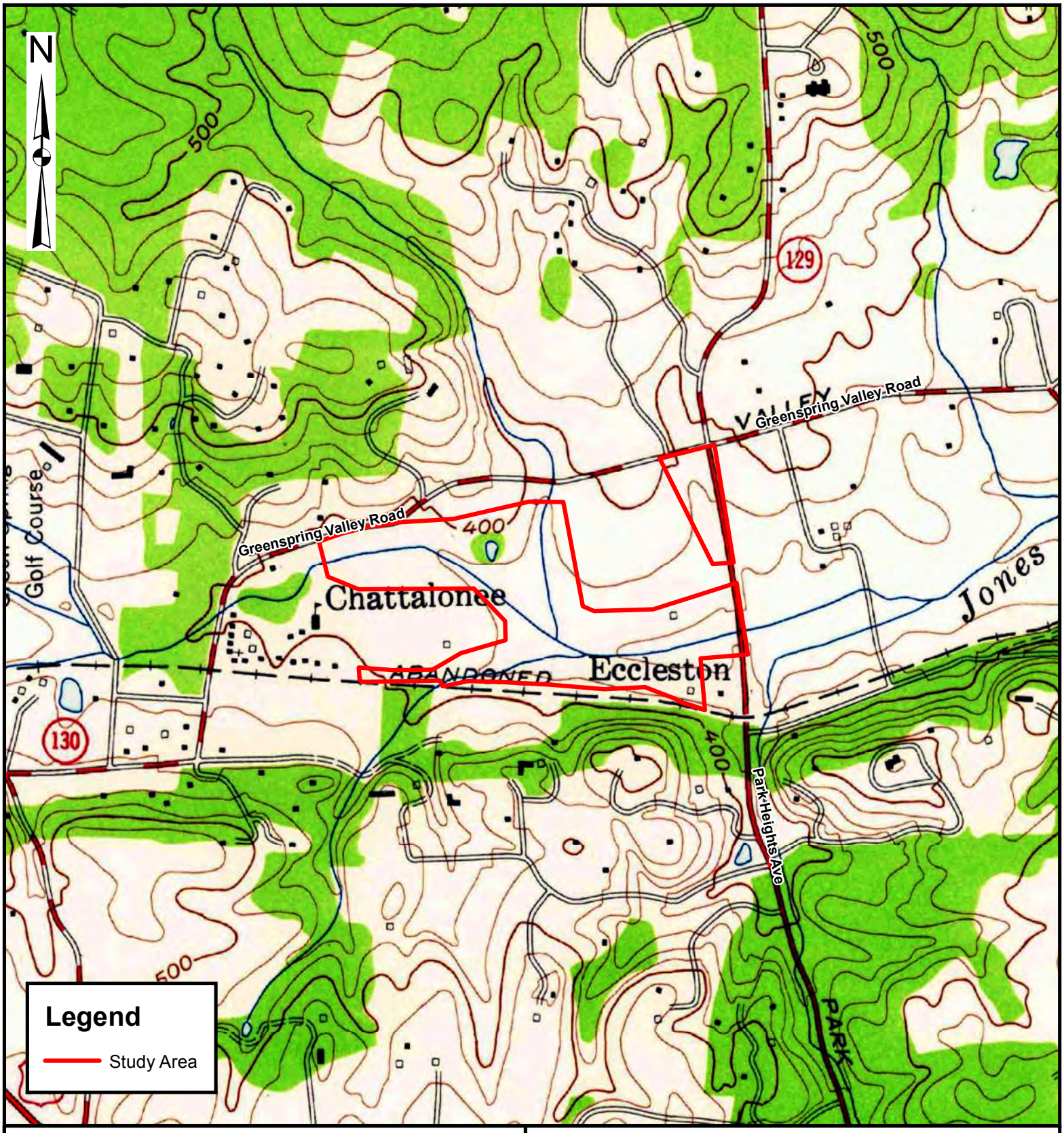
The Cockeysville Topographic 7.5' x 7.5' Quadrangle (USGS, 1957) depicts Jones Falls within the central portion of the Study Area, as well as two unnamed tributaries (**Figure 2**).

The NWI (USFWS, 2002) and Maryland DNR (DNR, 2005) wetland datasets show one mapped palustrine wetland within the Study Area (**Figure 3**).

The MDE Stream Designated Use Class Map (MDE, 2014) shows three waterways: Jones Falls and two unnamed tributaries (Use III) (**Figure 3**).

The FEMA floodplain mapping for Baltimore County, Maryland (FEMA, 2014) depicts that the central portion of the Study Area, along Jones Falls, is within the 100-year floodplain (FIRM Panel #2400100240F) (**Figure 3**).

The Web Soil Survey for Baltimore County, Maryland, (USDA-NRCS, 2017) indicates that nine soil survey units occur within the Study Area, one of which is predominantly hydric (**Figure 4**).



0 500 1,000 2,000 Feet

1 " = 1,000 '

SOURCE: USGS

FIGURE 2: USGS TOPOGRAPHIC MAP

ECCLESTON MITIGATION SITE

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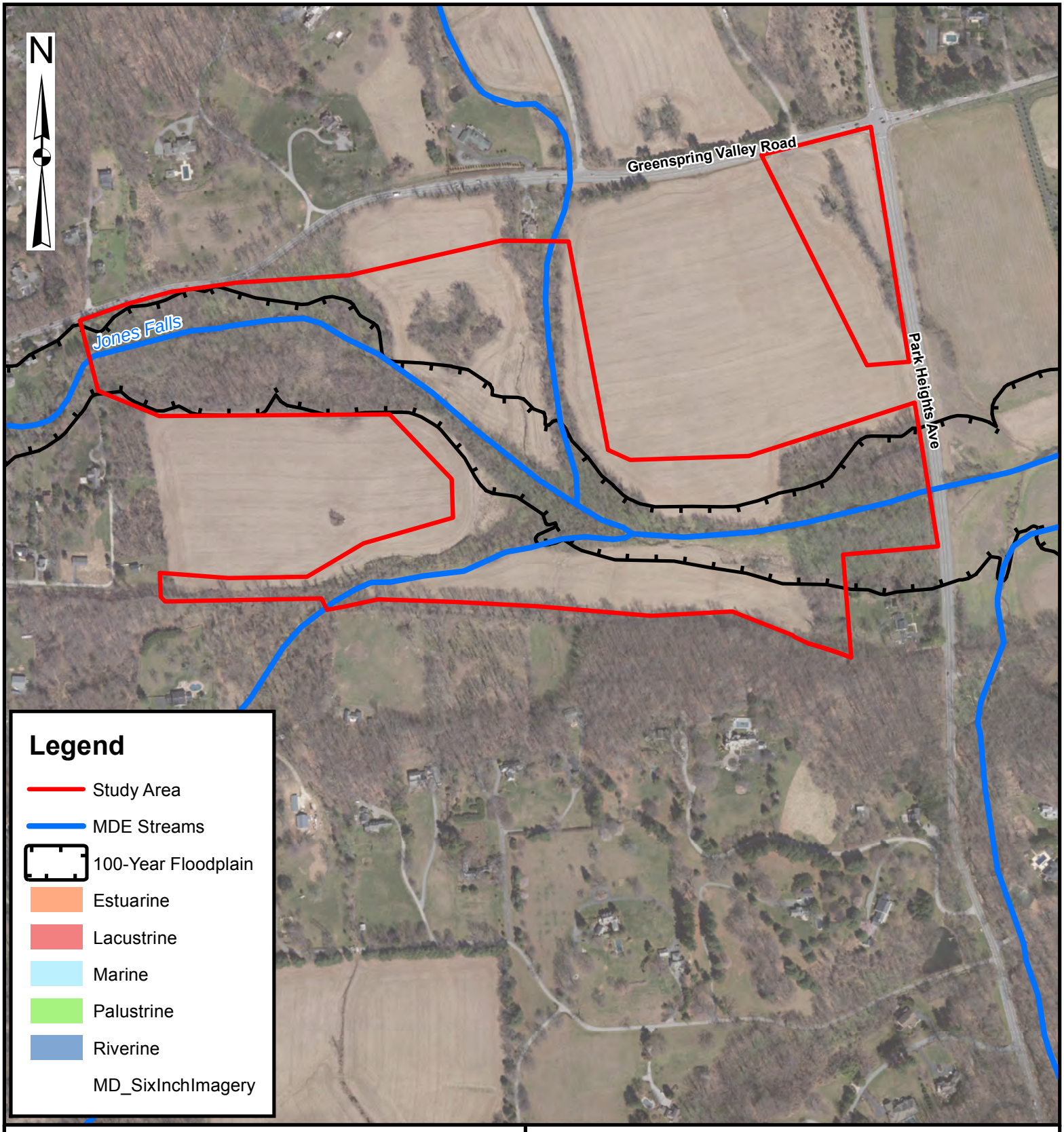

0 250 500 1,000 Feet

1 " = 500 '

SOURCE: MD IMAP, FEMA, MD DNR, USFWS NWI, MDE

FIGURE 3: PUBLISHED WATER RESOURCES

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

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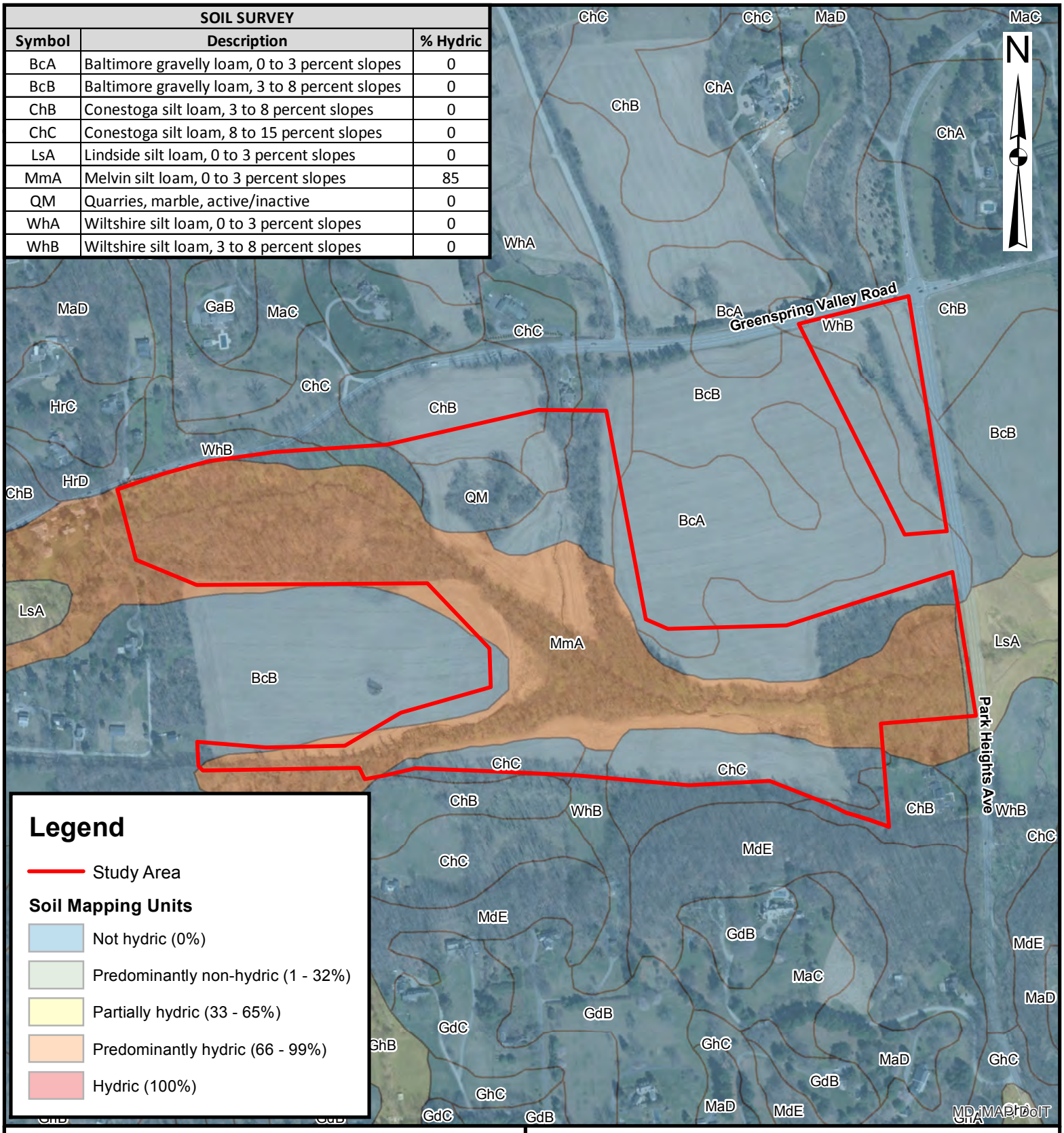
SOIL SURVEY		
Symbol	Description	% Hydric
BcA	Baltimore gravelly loam, 0 to 3 percent slopes	0
BcB	Baltimore gravelly loam, 3 to 8 percent slopes	0
ChB	Conestoga silt loam, 3 to 8 percent slopes	0
ChC	Conestoga silt loam, 8 to 15 percent slopes	0
LsA	Lindside silt loam, 0 to 3 percent slopes	0
MmA	Melvin silt loam, 0 to 3 percent slopes	85
QM	Quarries, marble, active/inactive	0
WhA	Wiltshire silt loam, 0 to 3 percent slopes	0
WhB	Wiltshire silt loam, 3 to 8 percent slopes	0



0 250 500 1,000 Feet

1 " = 500 '

SOURCE: MD IMAP, NRCS

FIGURE 4: SOIL SURVEY MAP

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3.2 AGENCY COORDINATION

Rare, Threatened, and Endangered Species

JMT sent a letter on September 19, 2017, to the Maryland DNR Wildlife and Heritage Service to determine if state-listed rare, threatened or endangered (RTE) species are present in the Study Area. A response was received on October 10, 2017, stating that there are no official state records for RTE species within the delineation area (**Appendix A**).

In a letter dated September 19, 2017, JMT contacted the DNR Environmental Review Program (ERP) to determine the presence of anadromous finfish or other fish in the Study Area. Response from DNR ERP was received on October 6, 2017. To protect spawning trout within Jones Falls, which is a Use III stream, no work may take place within streams between October 1 and April 30 of each year. DNR ERP also recommends strict adherence to the approved sediment and erosion control plan to prevent sediment-laden runoff from entering into the stream during construction (**Appendix A**).

Through coordination with USFWS, no federally listed threatened or endangered species are known to exist within the Study Area. The USFWS Online Certification Letters documenting these results, dated April 23, 2019, can be found in **Appendix A**. It should be noted that while the Northern Long-Eared Bat (*Myotis septentrionalis*) was flagged by the USFWS system, per the USFWS Chesapeake Bay Field Office (CBFO) website, the only areas in Maryland with documented hibernacula are Allegany, Garrett, and Washington Counties, and the only areas with documented maternity roosts are in Garrett and Allegany Counties. This project is located in Baltimore County, Maryland and would therefore not be located within 150 feet of a known maternity roost tree or within 0.25 miles of a known hibernaculum.

Historical Resources

JMT contacted the Maryland Historic Trust (MHT) in a letter dated September 19, 2017, to determine if the proposed project may impact known historical or archeological sites. A response was received on October 10, 2017, stating that MHT has determined that this project will have no adverse effects on historic or archaeological resources (**Appendix A**).

3.3 FIELD INVESTIGATIONS

Field investigations were conducted between March 5 and 12, 2018, and on May 23, 2018, to identify and delineate wetlands and waterways within the Study Area. Additional resources were delineated on May 3 and June 5, 2019. JMT identified 15 non-tidal wetlands and 17 WUS. Locations of the delineated systems are shown on the Delineated Resource Maps in **Appendix B**.

At least one wetland sample plot was taken to represent each wetland cover type, and one upland plot was taken for each wetland or shared between adjacent wetlands. Wetland Determination Data Forms for the representative wetland and upland sample plots are presented in **Appendix C,** and photographic documentation is included in **Appendix D**. Functions and values datasheets can be found in **Appendix E**.

The identified wetlands and WUS are described below.

Wetlands

Wetland 01 (WET 01)

WET 01 consists of a patchwork of wetland cover types: palustrine, scrub-shrub, broadleaf deciduous, saturated/seasonally flooded (PSS1B/C); palustrine, emergent, persistent/*Phragmites australis*, temporarily flooded (PEM1/5A); and palustrine, forested, broadleaf deciduous, temporarily flooded/saturated (PFO1A/B). The PSS area is approximately 0.14 acres in size, the PEM is 0.41 acres, and the PFO is 0.55 acres. One wetland sample plot was taken within each cover type.

WET 01 is located in the southwestern portion of the Study Area (**Appendix B, Maps 1-2**). It has formed due to relocation of WUS 01; WUS 01 has not yet developed defined bed and banks in its new location, and as a result it, dissipates into WET 01 before reforming further to the east. In addition to discharging into WUS 01, WET 01 also discharges into WUS 02 in two locations. In one of those locations, water that has seeped a short distance underground from the main portion of WET 01 daylights and forms a small wetland polygon; this was delineated as WET 01A and is considered part of the forested section of WET 01. Functions and values provided by WET 01 include groundwater recharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat.

WET 01-SP1 (PSS)

Within the PSS sample plot, the dominance test for hydrophytic vegetation was met. Dominant plant species in the tree stratum included green ash (*Fraxinus pennsylvanica*, FACW), black willow (*Salix nigra*, OBL), and American sycamore (*Platanus occidentalis*, FACW). In the sapling/shrub stratum, green ash was dominant. In the herbaceous stratum, fig buttercup (*Ficaria verna*, FAC) was dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, drift deposits, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position, and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

WET 01-SP2 (PEM)

The PEM sample plot was taken within one of the two large stands of common reed (*Phragmites australis*, FACW); however, non-phragmites-dominated emergent areas are also located within WET 01. Within the PEM wetland sample plot, the dominance test for hydrophytic vegetation was met. In the herbaceous stratum, common reed was dominant.

Primary hydrologic indicators observed included saturation and oxidized rhizospheres on living roots. Secondary hydrologic indicators included drainage patterns and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

WET 01-SP3 (PFO)

Within the PFO sample plot, the dominance test for hydrophytic vegetation was met. In the tree stratum, green ash was dominant. Dominant plant species in the sapling/shrub stratum included green ash and European privet (*Ligustrum vulgare*, FACU). In the herbaceous stratum, fig buttercup and skunk cabbage (*Symplocarpus foetidus*, OBL) were dominant.

Primary hydrologic indicators observed included saturation and oxidized rhizospheres on living roots. Secondary hydrologic indicators included drainage patterns and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 02 (WET 02)

WET 02 is a palustrine, forested, broadleaf deciduous, temporarily flooded/saturated (PFO1A/B) and palustrine, emergent, persistent, temporarily flooded/saturated (PEM1A/B) wetland. The PEM portion of WET 02 is approximately 0.07 acres in size, while the PFO area is approximately 0.2 acres. The emergent portion of the wetland is located within a gap in the forest canopy; other than the lack of trees, it has the same characteristics as the forested portion. Therefore, only one sample plot was taken.

WET 02 is located in the south-central portion of the Study Area and likely receives hydrology from a broken underground waterworks pipe (**Appendix B, Map 2**). This broken pipe also provides hydrology to WUS 03. Additional sources of hydrology to the wetland include runoff from adjacent farm fields and occasional floodflow from Jones Falls (WUS 05). WET 02 discharges to WUS 03. Functions and values provided by WET 02 include groundwater recharge, floodflow alteration, and wildlife habitat.

The dominance test for hydrophytic vegetation was met. Dominant plant species in the tree stratum included green ash and boxelder (*Acer negundo*, FAC). Dominant species in the sapling/shrub stratum included European privet and boxelder. In the herbaceous stratum, fig buttercup and skunk cabbage were dominant. Poison ivy (*Toxicodendron radicans*, FAC) was dominant in the vine stratum.
Primary hydrologic indicators observed included water stained leaves. Secondary hydrologic indicators included geomorphic position and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 03 (WET 03)

WET 03 is a palustrine, emergent, persistent, seasonally flooded (PEM1C) wetland approximately 0.01 acres in size. It is located in the south-central portion of the Study Area and has formed within a small depression located at the border between sloping farm fields and forested floodplain (**Appendix B, Map 2**). WET 03 receives hydrology from surface runoff from the fields and occasional floodflow, and it likely has a subsurface connection to Jones Falls. WET 03 appears to also function as a vernal pool; amphibian eggs were observed within the standing water. Functions and values provided by WET 03 include sediment/toxicant retention, nutrient removal, and wildlife habitat; it is not considered to provide floodflow alteration functions due to its small size.

The dominance test for hydrophytic vegetation was met. Dominant plant species in the herbaceous stratum included reed canary grass (*Phalaris arundinacea*, FACW) and soft rush (*Juncus effusus*, FACW).

Primary hydrologic indicators observed included surface water, high water table, saturation, and aquatic fauna. Secondary hydrologic indicators included geomorphic position and the FAC-neutral test. The soil profile met the loamy gleyed matrix (F2) indicator.

Wetland 04 (WET 04)

WET 04 consists of two wetland cover types: palustrine, forested, broadleaf deciduous, temporarily flooded/saturated (PFO1A/B); and palustrine, emergent, persistent, saturated/seasonally flooded (PEM1B/C). The PFO area is approximately 0.43 acres in size and the PEM area is 0.40 acres in size. One wetland sample plot was taken within each cover type.

WET 04 is located in the southeastern portion of the Study Area, adjacent to Park Heights Avenue (**Appendix B, Map 2**). It receives hydrology from groundwater, surface runoff from the adjacent farm fields and road, and occasional floodflow from Jones Falls. WET 04 is drained by a culvert that is currently partially blocked and backwatered; increased inundation is occurring within the wetland as a result. WET 04 is also hydrologically connected to Jones Falls through subsurface flow and possibly through surface flow during especially wet times. Functions and values provided by WET 04 include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.

WET 04-SP1 (PFO)

Within the PFO wetland sample plot, the dominance test for hydrophytic vegetation was met. In the tree stratum, red maple (*Acer rubrum*, FAC) and green ash were dominant. Dominant plant species in the sapling/shrub stratum included European privet, American beech (*Fagus grandifolia*, FACU), and boxelder. In the herbaceous stratum, skunk cabbage was dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, inundation visible on aerial imagery, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

WET 04-SP2 (PEM)

The eastern half of the emergent cover type within WET 04 is dominated by reed canary grass. The PEM wetland sample plot was taken further west, within the more diverse emergent community that makes up the remainder of the cover type. Within the PEM wetland sample plot, the dominance test for hydrophytic vegetation was met. In the herbaceous stratum, false nettle (*Boehmeria cylindrica*, FACW), skunk cabbage, and woolgrass (*Scirpus cyperinus*, FACW) were dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, water stained leaves, and presence of reduced iron. Secondary hydrologic indicators included geomorphic position, microtopographic relief, and the FAC-neutral test. The soil profile met the thick dark surface (A12) indicator.

Wetland 05 (WET 05)

WET 05 is a palustrine, emergent, persistent, temporarily flooded/saturated (PEM1A/B) wetland approximately 0.03 acres in size. It is located in the southeastern portion of the Study Area, south of Jones Falls, and has formed within a small depression adjacent to WUS 06 and Jones Falls (**Appendix B, Map 2**). WET 05 appears to receive hydrology from WUS 06, existing tile drains, and subsurface flow from WET 06. WET 05 also occasionally receives floodflow from Jones Falls, but the wetland is not large enough to provide substantial floodflow alteration functions and values. WET 05 does, however, provide groundwater recharge and wildlife habitat functions.

The dominance test for hydrophytic vegetation was met. In the tree stratum, horse chestnut (*Aesculus hippocastanum*, NI) was dominant; European privet was dominant in the sapling/shrub stratum. In the herbaceous stratum, skunk cabbage and fig buttercup were dominant.

Primary hydrologic indicators observed included water stained leaves. Secondary hydrologic indicators included drainage patterns and geomorphic position. The soil profile met the depleted matrix (F3) indicator.

Wetland 06 (WET 06)

WET 06 consists of two wetland cover types: palustrine, emergent, persistent, saturated/seasonally flooded (PEM1B/C); and palustrine, forested, broad-leafed deciduous, saturated/seasonally flooded (PFO1B/C). The wetland is located in the southeastern portion of the Study Area, west of Park Heights Avenue, and extends outside of the study area to the south and east (**Appendix B, Map 2**). The PEM area is approximately 0.70 acres in size and the PFO area is approximately 0.66 acres in size. WET 06 receives hydrology from groundwater, surface runoff from the farm fields, roadway runoff, and occasional floodflow from Jones Falls. The wetland is likely hydrologically connected to Jones Falls and WUS 06 through subsurface flow. Functions and values provided by WET 06 include groundwater recharge/discharge, floodflow alteration, sediment/ toxicant retention, nutrient removal, and wildlife habitat.

WET 06-SP1 (PEM)

The dominance test for hydrophytic vegetation was met. Reed canary grass and soft rush were the dominant vegetation in the herbaceous stratum.

Primary hydrologic indicators observed included surface water, high water table, and saturation. Secondary hydrologic indicators included drainage patterns, saturation visible on areal imagery, geomorphic position, microtopographic relief, and the FAC-neutral test. The soil met the depleted matrix (F3) indicator.

WET 06-SP2 (PFO)

The dominance test for hydrophytic vegetation was met. Dominant vegetation in the tree stratum included green ash. In the herbaceous stratum, skunk cabbage was dominant.

Primary hydrologic indicators observed included surface water, saturation, water-stained leaves, and aquatic fauna. Secondary hydrologic indicators included drainage patterns, geomorphic position, and FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 07 (WET 07)

WET 07 is a palustrine, forested, broadleaf deciduous, saturated/seasonally flooded (PFO1B/C) wetland approximately 0.4 acres in size. It is located in the northwestern portion of the Study Area, northeast of Jones Falls, and has formed at the toe of a wooded slope (**Appendix B, Map 3**). WET 07 receives hydrology from groundwater, surface runoff from the adjacent slope and farm fields, and occasional floodflow from Jones Falls. WET 07 discharges to WUS 07, a small intermittent stream located to the southeast. Functions and values provided by this wetland include groundwater discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat.

The dominance test for hydrophytic vegetation was met. In the tree stratum, red maple was dominant. Dominant plant species in the sapling/shrub stratum included European privet and boxelder. In the herbaceous stratum, skunk cabbage was dominant, as was poison ivy in the woody vine stratum.

Primary hydrologic indicators observed included surface water, high water table, saturation, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position, and microtopographic relief. The soil profile met the depleted matrix (F3) indicator.

Wetland 08 (WET 08)

WET 08 consists of two wetland cover types: palustrine, forested, broadleaf deciduous, temporarily flooded/saturated (PFO1A/B); and palustrine, emergent, persistent, saturated/temporarily flooded (PEM1A/B). The PFO area is approximately 0.59 acres in size and the PEM area is 0.20 acres in size. One wetland sample plot was taken within each cover type.

WET 08 is located in the northwestern portion of the Study Area, south of Greenspring Valley Road (**Appendix B, Map 3**). WET 08A, a smaller wetland polygon, is located to the east of the main portion of WET 08. Although two separate wetland polygons were delineated, both are considered to be part of the same wetland system. WET 08 receives hydrology from WUS 14 and WUS 15, unmanaged road runoff, and precipitation. WET 08 discharges into WUS 08 and WUS 09, both of which are tributaries to Jones Falls. WET 08 is also hydrologically connected to Jones Falls through subsurface flow and possibly through surface flow during especially wet times. The wetland continues north outside of the Study Area in two locations. Functions and values provided by WET 08 include groundwater recharge, occasional floodflow alteration, sediment/toxicant retention, and wildlife habitat.

WET 08-SP1 (PFO)

Within the PFO sample plot, the dominance test for hydrophytic vegetation was met. In the tree stratum, red maple was dominant. Dominant vegetation in the sapling/shrub stratum included American sweetgum (*Liquidambar styraciflua*, FAC). In the herbaceous stratum, fig buttercup and one unidentified grass were dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position, microtopographic relief, and FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

WET 08-SP2 (PEM)

Within the PEM sample plot, the dominance test for hydrophytic vegetation was met. In the herbaceous stratum, tussock sedge (*Carex stricta*, OBL) and skunk cabbage were dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, inundation visible on aerial imagery, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position, microtopographic relief, and FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 09 (WET 09)

WET 09 consists of two wetland cover types: palustrine, emergent, persistent, saturated/seasonally flooded (PEM1B/C); and palustrine, forested, broadleaf deciduous, temporarily flooded/saturated/seasonally flooded (PFO1A/B/C). The PFO area is approximately 3.56 acres in size and the PEM area is 1.02 acres in size. One wetland sample plot was taken within each cover type.

WET 09 is located in the northwestern portion of the Study Area, south of Jones Falls and north of a large farm field (**Appendix B, Map 3**). It receives hydrology from groundwater, surface runoff from the adjacent farm field, and occasional floodflow from Jones Falls. WET 09 discharges to Jones Falls through WUS 10, WUS 11, and WUS 12. WET 09 is also hydrologically connected to Jones Falls through subsurface flow and possibly through surface flow during especially wet times. Functions and values provided by WET 09 include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat. WET 09 continues outside of the Study Area to the west.

WET 09-SP1 (PEM)

Within the PEM sample plot, the dominance test for hydrophytic vegetation was met. Dominant plant species in the sapling/shrub stratum included European privet. In the herbaceous stratum skunk cabbage and rice cutgrass (*Leersia oryzoides,* OBL) were dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, and presence of reduced iron. Secondary hydrologic indicators included drainage patterns, geomorphic position, microtopographic relief, and FAC-neutral test. The soil profile met the thick dark surface (A12) indicator.

WET 09-SP2 (PFO)

Within the PFO sample plot, the dominance test for hydrophytic vegetation was met. In the tree stratum, pin oak (*Quercus palustris,* FACW) and silver maple (*Acer saccharinum,* FACW) were dominant. Dominant plant species in the sapling/shrub stratum included European privet and multiflora rose (*Rosa multiflora,* FACU). In the herbaceous stratum, sensitive fern (*Onoclea sensibilis*, FACW), false nettle, and rice cutgrass were dominant.

Primary hydrologic indicators observed included surface water, high water table, saturation, and water stained leaves. Secondary hydrologic indicators included drainage patterns, geomorphic position, microtopographic relief, and the FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 10 (WET 10)

WET 10 is a palustrine, unconsolidated bottom, mud, permanently flooded (PUB3H) wetland, totaling approximately 0.12 acres in size. It is an abandoned quarry located in the north-central portion of the Study Area, west of WUS 20 and 21 (**Appendix B, Map 4**). It receives hydrology from groundwater, surface runoff from the adjacent farm fields, and precipitation. WET 10 contains a substantial amount of trash and debris. Functions and values provided by WET 10 include groundwater recharge/discharge and wildlife habitat.

No terrestrial vegetation was located within the wetland, due to the permanent presence of deep standing water. Likewise, soils could not be sampled due to the steep slopes of the quarry and the deep water. However, in cases of permanent inundation, hydric soils can be assumed. Therefore, while soils and vegetation are naturally problematic, the hydric soil and hydrophytic vegetation requirements are considered to still be met.

Primary hydrologic indicators observed included surface water, high water table, saturation, inundation visible on aerial imagery, and true aquatic plants. Secondary hydrologic indicators included geomorphic position.

Wetland 11 (WET 11)

WET 11 is a palustrine, emergent, persistent, temporarily flooded (PEM1A) wetland, approximately 0.02 acres in size. The wetland is located in the southcentral portion of the study area, at the toe of slope of an adjacent farm field (**Appendix B, Map 2**). The wetland is located within the Jones Falls floodplain and is likely connected to WUS 20, WUS 21, and WUS 05 through subsurface flow. Functions and values provided by WET 11 include groundwater recharge, although function is limited by the small size of the wetland.

The dominance test for hydrophytic vegetation was met. Dominant plant species in the herbaceous stratum included tussock sedge, Japanese stiltgrass (*Microstegium vimineum*, FAC), and creeping bentgrass (*Agrostis stolonifera*, FACW).

Primary hydrologic indicators observed included surface water, high water table, saturation, and drift deposits. Secondary hydrologic indicators included drainage patterns, geomorphic position, and FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 12 (WET 12)

WET 12 is a palustrine, emergent, persistent, seasonally flooded (PEM1C) wetland, approximately 0.10 acres in size. The wetland is located on a farmed hillslope in the south-central portion of the Study Area (**Appendix B, Map 2**). WET 12 is fed by WUS 13 and upland runoff; discharge from the wetland and from WUS 13 is redirected east as sheet flow across the farm field, and dissipates near the edge of the forest. There may be a subsurface connection between this sheet flow and WUS 02. Functions and values provided by WET 12 include floodflow alteration, sediment/toxicant retention, and nutrient removal.

The dominance test for hydrophytic vegetation was met. Dominant plant species in the herbaceous stratum included switchgrass (*Panicum virgatum*, FAC) and arrowleaf tearthumb (*Polygonum sagittatum,* OBL).

Primary hydrologic indicators observed included surface water, high water table, saturation, and iron deposits. Secondary hydrologic indicators included microtopographic relief and FAC-neutral test. The soil profile met the depleted matrix (F3) indicator.

Wetland 20 (WET 20)

WET 20 is a palustrine, emergent, persistent, seasonally flooded, farmed (PEM1Cf) wetland approximately 0.04 acres in size. WET 20 is located in an agricultural field in the central portion of the Study Area, south of WET 10; due to impacts from agriculture, it is considered significantly disturbed (**Appendix B, Map 4**). WET 20 receives hydrology from precipitation and surface runoff from the adjacent farm fields, and it likely has a subsurface connection to Jones Falls. WET 20 also occasionally receives floodflow from Jones Falls, but the wetland is not large enough to provide a substantial floodflow alteration function. However, WET 20 does provide a groundwater recharge function.
Vegetation within the wetland was considered problematic, since it is actively farmed. Dominant plant species in the in the herbaceous stratum were Johnsongrass (*Sorghum halepense,* FACU), maize (*Zea mays,* NI), and yellow foxtail (*Setaria pumila,* FAC).

Primary hydrologic indicators observed included surface water and saturation. Secondary hydrologic indicators included geomorphic position. The soil profile met the depleted matrix (F3) indicator.

Wetland 21 (WET 21)

WET 21 is a palustrine, emergent, persistent, seasonally flooded, farmed (PEM1Cf) wetland totaling 0.03 acres in size. It is located in a farm field in the central portion of the Study Area, west of WUS 21; due to

impacts from agriculture, it is considered significantly disturbed (**Appendix B, Maps 1-2**). WET 21 receives hydrology from precipitation and surface runoff from the adjacent farm fields, and it likely has a subsurface connection to Jones Falls and WUS 21. WET 21 also occasionally receives floodflow from Jones Falls, but the wetland is not large enough to provide substantial floodflow alteration functions and values. However, WET 21 does provide the groundwater recharge function.

Vegetation within the wetland was considered problematic, since it is actively farmed. Dominant plant species in the herbaceous stratum were Johnsongrass, maize, and yellow foxtail.

The primary hydrologic indicator observed was water stained leaves. Secondary hydrologic indicators included surface soil cracks, drainage patterns, and geomorphic position. The soil profile met the depleted matrix (F3) indicator.

Wetland 22 (WET 22)

WET 22 is a palustrine, emergent, persistent, seasonally flooded (PEM1C) wetland totaling 0.10 acres in size. WET 22 is located in the central portion of the Study Area, abutting WUS 21 (**Appendix B, Map 4)**. It receives hydrology from flow that was diverted from WUS 20 to provide a water source for cattle. The channel is not sufficiently sized to handle the hydrology being diverted through it; as a result, the area surrounding the stream is routinely inundated and saturated, resulting in the formation of WET 22. The wetland abuts active farmland, resulting in problematic vegetation. Functions and values provided by WET 22 include groundwater recharge and floodflow alteration.

The dominance test for hydrophytic vegetation was met. Dominant plant species in the herbaceous stratum included soft rush and arrowleaf tearthumb.

Primary hydrologic indicators observed included surface water, saturation, water stained leaves, and aquatic fauna. Secondary hydrologic indicators included drainage patterns, and geomorphic position. The soil profile met the depleted matrix (F3) indicator.

WUS

Waters of the US 01 (WUS 01)

WUS 01 is a perennial stream that enters the Study Area from the southwest (**Appendix B, Maps 1-2)**. Per aerial imagery, the stream formerly followed the flow path of WUS 02, then was altered to flow north and abandon that channel. WUS 01's path has recent been altered again and now flows east before losing its channel and dissipating into WET 01. WUS 01 reforms at the eastern edge of WET 01, eventually discharging into Jones Falls. Upstream of WET 01, the stream channel is approximately 6 feet wide with banks 1 foot high; at the time of the delineation, flow within the channel was between 6 and 24 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 02 (WUS 02)

WUS 02 is a perennial and intermittent stream located in the southwestern portion of the Study Area (**Appendix B, Maps 1-2**). The stream flows to the east and becomes perennial after abutting WET 01; it discharges into Jones Falls. The stream channel is approximately 2 to 4 feet wide with banks between 1 and 2.5 feet high; at the time of the delineation, flow within the channel varied between 4 and 18 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 03 (WUS 03)

WUS 03 is a perennial stream located in the center of the Study Area that receives hydrology from a broken waterworks pipe (**Appendix B, Map 2**). WUS 03 flows southeast, discharging into Jones Falls. The stream channel varies between 1 and 5 feet wide with banks between 0.5 and 1 feet high; at the time of the delineation, flow within the channel was between 2 and 12 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 04 (WUS 04)

WUS 04 is a perennial stream that enters the Study Area from the north, originating from a culvert under Greenspring Valley Road (**Appendix B, Map 5**). The stream flows south/southeast, eventually discharging into a culvert under Park Heights Avenue at the eastern boundary of the Study Area. WUS 04 discharges into Jones Falls outside of the Study Area. The channel is between 2 and 6 feet wide with banks between 2 and 4 feet high; at the time of the delineation, flow within the channel was between 3 and 6 inches deep. The substrate consists of cobble, sand, gravel, and silt. The banks of WUS 04 are heavily vegetated with briers and vines.

Waters of the US 05 (WUS 05) – Jones Falls

WUS 05 is the perennial stream Jones Falls (**Appendix B, Maps 1-4**). The stream flows east to southeast through the entirety of the Study Area and receives hydrology from multiple tributaries and wetlands. Jones Falls eventually discharges into Baltimore Inner Harbor. The channel is approximately 8 feet wide and 2 to 4 feet deep; at the time of the delineation, flow within the channel was between 2 and 3 feet deep. The substrate consists of sand, cobble, and silt.

Waters of the US 06 (WUS 06)

WUS 06 is a perennial stream that originates from a groundwater seep (**Appendix B, Map 2**). This seep likely receives hydrology from subsurface flow from WET 06 as well as from tile drains. The stream flows north through the Study Area, abutting the southern side of WET 05 before discharging into Jones Falls. The channel is approximately 2 feet wide with banks between 0.5 and 2 feet deep; at the time of the delineation, flow within the channel was 3 inches deep. The substrate consists of sand and silt.

Waters of the US 07 (WUS 07)

WUS 07 is an intermittent stream that receives hydrology from WET 07 (**Appendix B, Map 3**). The stream flows southeast, discharging into Jones Falls. The channel is approximately 2 feet wide and 6 inches deep; at the time of the delineation, flow within the channel was 3 inches deep. The substrate consists of sand and silt.

Waters of the US 08 (WUS 08)

WUS 08 is an intermittent stream that receives hydrology from WET 08 (**Appendix B, Map 3**). The stream flows south, discharging into Jones Falls. The channel is 2 to 3 feet wide with banks between 1 and 2 feet high; at the time of the delineation, flow within the channel was between 4 and 6 inches deep. The substrate consists of sand, cobble, and silt.

Waters of the US 09 (WUS 09)

WUS 09 is an intermittent stream that receives hydrology from WET 08A (**Appendix B, Map 3**). It flows east, discharging into Jones Falls. The channel is approximately 2 feet wide with banks 6 inches deep; at the time of the delineation, flow within the channel was 3 inches deep. The substrate consists of sand and silt.

Waters of the US 10 (WUS 10)

WUS 10 is an intermittent stream that receives hydrology from WET 09 (**Appendix B, Map 3**). The stream flows north, discharging into Jones Falls. The channel is 2 to 3 feet wide with banks 1 to 2 feet high; at the time of the delineation, flow within the channel was 6 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 11 (WUS 11)

WUS 11 is an intermittent stream that receives hydrology from WET 09 (**Appendix B, Map 3**). The stream flows east, discharging into Jones Falls. The channel is between 2 and 5 feet wide with banks between 1 and 2 feet high; at the time of the delineation, flow within the channel was between 3 to 9 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 12 (WUS 12)

WUS 12 is a perennial stream that receives hydrology from WET 09 (**Appendix B, Map 3**). The stream flows northeast into Jones Falls. The channel is between 2 and 3 feet wide with banks 1 foot high; at the time of the delineation, flow within the channel was between 3 and 6 inches deep. The substrate consists of cobble, sand, gravel, and silt.

Waters of the US 13 (WUS 13)

WUS 13 is an intermittent stream that receives hydrology from a culvert outside of the Study Area (**Appendix B, Map 2**). The stream flows north through WET 12 and then dissipates into sheet flow. This sheet flow may have a subsurface connection to WUS 02. The channel is between 0.5 and 5 feet wide with banks less than 6 inches high; at the time of the delineation, flow within the channel was approximately 3 inches deep. The substrate consists of sand, silt, and vegetation.

Waters of the US 14 (WUS 14)

WUS 14 is an intermittent stream that receives hydrology from a culvert under Greenspring Valley Road (**Appendix B, Map 3**). The stream flows south and dissipates into WET 08, which is adjacent to Jones Falls. The channel is between 1 and 4 feet wide with banks between 1 and 3 feet high; at the time of the delineation, flow within the channel was 1 to 14 inches deep. The substrate consists of gravel, sand, and silt.

Waters of the US 15 (WUS 15)

WUS 15 is an intermittent stream that receives hydrology from a culvert under Greenspring Valley Road (**Appendix B, Map 3**). The stream flows south and dissipates into WET 08, which is adjacent to Jones Falls. The channel is between 1 and 2 feet wide with 1-foot high banks; at the time of the delineation, flow within the channel was 2 to 4 inches deep. The substrate consists of sand and silt.

Waters of the US 20 (WUS 20)

WUS 20 is a perennial stream located in the center of the Study Area (**Appendix B, Maps 2-4**). The stream flows south through the Study Area, eventually discharging into Jones Falls. Near the northern boundary of the Study Area, the majority of WUS 20's flow has been diverted through a pipe to WUS 21, leaving the downstream portion of WUS 20 dry. The channel is between 2 and 15 feet wide with banks 2 to 4 feet high; at the time of the delineation, flow within the channel was between 3 and 6 inches deep. The substrate consists of cobble, sand, gravel, vegetation, and silt.

Waters of the US 21 (WUS 21)

WUS 21 is an intermittent stream that receives hydrology from water diverted from WUS 20 (**Appendix B, Maps 2-4**). It flows south, discharging into Jones Falls and providing hydrology to WET 22. When the diversion pipe from WUS 20 becomes clogged, WUS 21 dries completely; therefore, WUS 21 is considered intermittent. The channel is between 2 and 6 feet wide and 1 foot deep; at the time of the delineation, flow within the channel was 3 to 6 inches deep. The substrate consists of sand, muck, vegetation, and silt.

4.0 CONCLUSIONS

JMT conducted a review of published information and performed field investigations based on the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont*

(Version 2.0) to identify potentially jurisdictional wetlands and WUS within the Study Area. Based on the results of the investigation, JMT identified 15 non-tidal wetlands and 17 WUS within the Study Area. **Tables 2 and 3** summarize the delineated resources.

Throughout the Study Area, evidence of anthropogenic alteration of the hydrologic regime was observed. Relocation of water from various parts of the floodplain to different locations through waterworks has resulted in the creation of new wetlands and streams and reduced hydrologic input within existing systems. Repeated relocation of WUS 01 has resulted in the lessening of hydrology within WUS 02 (its previous path) and the creation of WET 01. Altogether, the Eccleston Study Area presents a picture of an unstable, heavily altered system that would benefit from restoration.

Table 2: Summary of Delineated Wetlands

Wetland Name	Cowardin Classification	Area (Ac.)
WET 01	PSS1B/C, PEM1/5A, PFO1A/B	1.10
WET 02	PFO1A/B, PEM1A/B	0.27
WET 03	PEM1C	0.01
WET 04	PFO1A/B, PEM1B/C	0.83
WET 05	PEM1A/B	0.03
WET 06	PEM1B/C, PFO1B/C	1.36
WET 07	PFO1B/C	0.40
WET 08	PFO1A/B, PEM1A/B	0.79
WET 09	PEM1B/C, PFO1A/B/C	4.58
WET 10	PUB3H	0.12
WET 11	PEM1A	0.02
WET 12	PEM1C	0.10
WET 20	PEM1Cf	0.04
WET 21	PEM1Cf	0.03
WET 22	PEM1C	0.10

Table 3: Summary of Delineated Streams

Waterway Name	Stream Classification	Length (LF)	Width (Ft.)
WUS 01	Perennial	859	6
WUS 02	Perennial/Intermittent	655	4
WUS 03	Perennial	295	5
WUS 04	Perennial	735	6
WUS 05	Perennial	3,800	8
WUS 06	Perennial	113	2
WUS 07	Intermittent	32	2
WUS 08	Intermittent	43	3
WUS 09	Intermittent	44	2
WUS 10	Intermittent	112	3
WUS 11	Intermittent	258	5
WUS 12	Perennial	43	3
WUS 13	Intermittent	143	2
WUS 14	Intermittent	19	3
WUS 15	Intermittent	19	2.5
WUS 20	Perennial	1,160	15
WUS 21	Intermittent	536	6

Environmental resources identified in this report may be subject to regulation by USACE and MDE. Impacts to these resources may require authorization by USACE and MDE as well as mitigation.

5.0 REFERENCES

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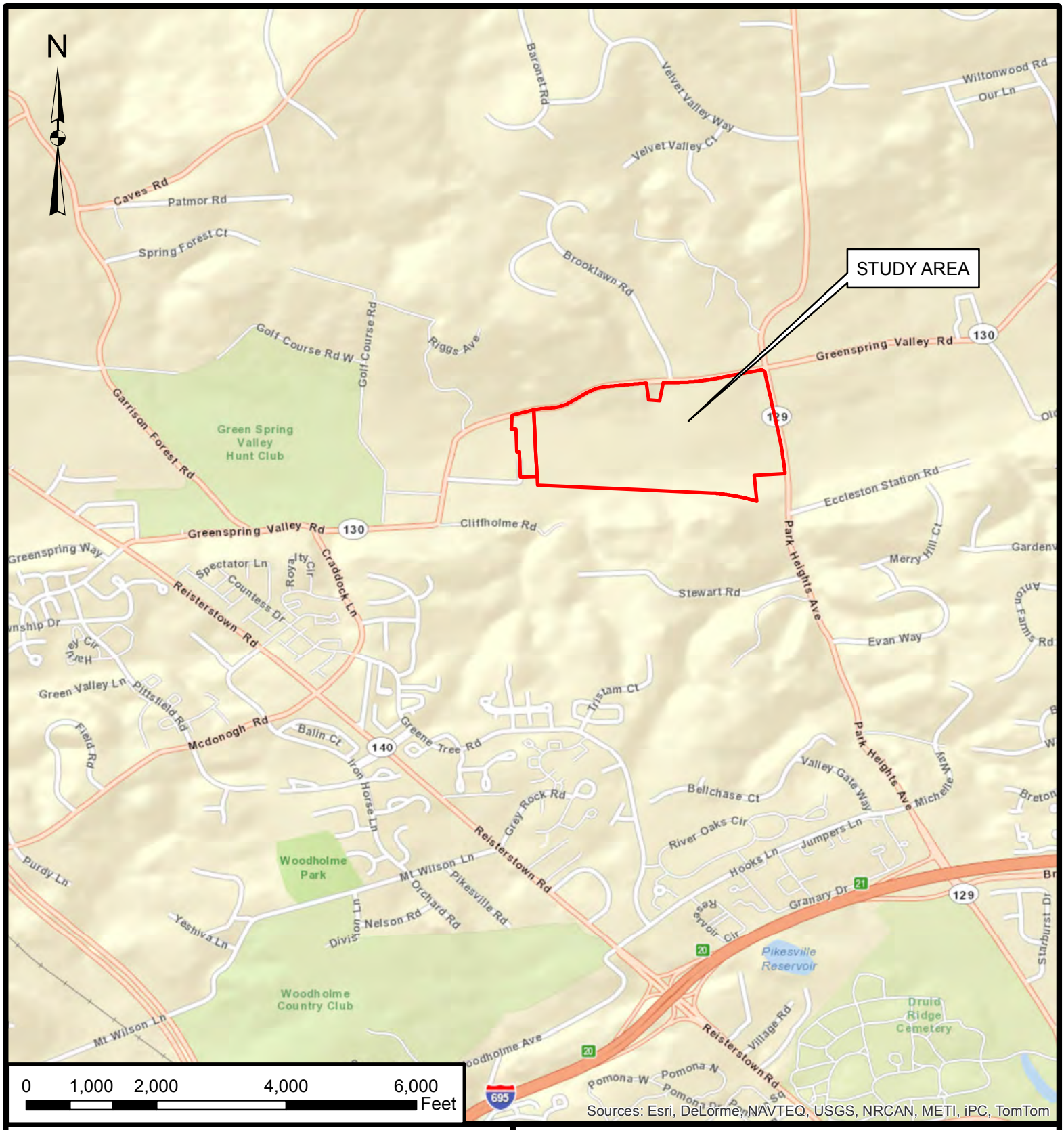
APPENDIX A
AGENCY CORRESPONDENCE



Eccleston Restoration Site

Baltimore County, Maryland

SOURCE: ESRI

DATE: SEPTEMBER 2017 | **SCALE: 1" = 2,000'**

FIGURE 1 VICINITY MAP

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Larry Hogan, *Governor*
Boyd Rutherford, *Lt. Governor*
Mark Belton, *Secretary*
Joanne Throwe, *Deputy Secretary*

October 10, 2017

Ms. Erin Markel
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

RE: Environmental Review for Eccleston Stream and Wetland Restoration Site, JMT Job No. 17-10977, Jones Falls and tributaries, Baltimore County, Maryland.

Dear Ms. Markel:

The Wildlife and Heritage Service has determined that there are no official State or Federal records for listed plant or animal species within the delineated area shown on the map provided. As a result, we have no specific concerns regarding potential impacts or recommendations for protection measures at this time. Please let us know however if the limits of proposed disturbance or overall site boundaries change and we will provide you with an updated evaluation.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2017.1492.ba

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Larry Hogan, *Governor*
Boyd Rutherford, *Lt. Governor*
Mark Belton, *Secretary*
Joanne Throwe, *Deputy Secretary*

18-MIS-054

October 6th, 2017

Erin Markel
JMT
40 Wright Avenue
Hunt Valley, MD 21030

Subject: Fisheries Information for the Eccleston Stream and Wetland Restoration Site, Baltimore County, JMT Job No. 17-10977

Dear Ms. Markel;

The above referenced project has been reviewed to determine fisheries species near the proposed project. The proposed activities include stream and wetland restoration efforts along parts of Jones Falls and its tributaries in Baltimore County, MD.

The project will take place within Jones Falls which is classified as a Use III stream (supports growth and propagation of trout). In general, no work is allowed within Use III stream between October 1st and April 30th to protect spawning trout. The applicant is encouraged to strictly adhere to the approved sediment and erosion control plan to prevent sediment laden runoff from entering the stream during construction.

DNR has documented resident fish species from Jones Falls and its nearby tributaries by our Maryland Biological Stream Survey. MBSS data can be accessed via the MDDNR web page at http://streamhealth.maryland.gov, allowing access to resource surveys.

If you have any further questions, please feel free to contact me at 410 260-8736.

Sincerely;

Christopher Aadland

Christopher Aadland
Environmental Review Program

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127
http://www.fws.gov/chesapeakebay/
http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html

In Reply Refer To: April 23, 2019
Consultation Code: 05E2CB00-2019-SLI-1262
Event Code: 05E2CB00-2019-E-03099
Project Name: MDTA Phase II I-95 Improvements Eccleston Mitigation Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2019-SLI-1262

Event Code: 05E2CB00-2019-E-03099

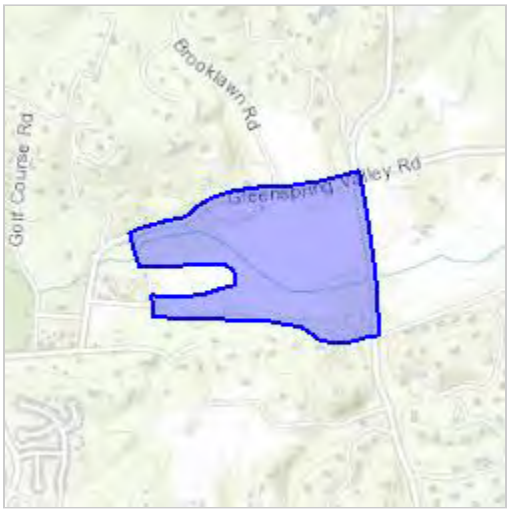
Project Name: MDTA Phase II I-95 Improvements Eccleston Mitigation Site

Project Type: TRANSPORTATION

Project Description: The Maryland Transportation Authority (MDTA) is proposing the second implementation phase of the I-95 Section 200 Express Toll Lanes Improvements in Baltimore and Harford Counties. MDTA will be implementing stream restoration practices to enhance overall water quality and stream stability. Practices to be implemented include, but are not limited to, reconfiguration of horizontal and vertical profiles of existing stream channels using natural channel design techniques, bank stabilization, as well as conversion of concrete lined channels to more naturalized systems. Implementation of these practices will require disturbance to active stream channels, however, the end result will be improvements to water quality.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.408154967994975N76.73515751086774W



Counties: Baltimore, MD

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis*	Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Projects with a federal nexus that have tree clearing = to or > 15 acres: 1. REQUEST A SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule Consistency key

Species profile: https://ecos.fws.gov/ecp/species/9045

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM5A

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A
- PFO/SS1A

20170594

F
COE
DLM

September 19, 2017

RECEIVED
SEP 2 : 2017
BY:

Maryland Historical Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, MD 21032-2023

Attn: Ms. Beth Cole
Administrator, Review and Compliance

RE: Eccleston Stream and Wetland Restoration Site
Baltimore County, Maryland
JMT Job No. 17-10977

Dear Ms. Cole,

JMT is proposing stream and wetland restoration efforts along parts of Jones Falls and its tributaries in Baltimore County, MD.

Please accept this correspondence as a request for an evaluation of the study area for the presence of any historical sites, archeological sites or unique features. Following your review, we would appreciate an opinion as to whether an archeological investigation is warranted. We look forward to the receipt of your findings and appreciate your assistance with this matter. If additional information is required, please do not hesitate to contact me at (443) 212-7143 or emarkel@jmt.com.

Very truly yours,

JOHNSON, MIRMIRAN & THOMPSON, INC.

Erin R Markel

Erin Markel
Environmental Scientist

Cc: Chandler Denison, Associate, JMT

Enclosures

The Maryland Historical Trust has determined that this undertaking will have no adverse effect on historic properties.

Date 10/10/17

40 Wight Avenue, Hunt Valley, MD 21030 (410) 329-3100 www.jmt.com

Also in NR: Green Spring Valley Hist. Dist.

Archeo. WJH 10/10/17 Qual

APPENDIX B
DELINEATED RESOURCE MAPS

SPRING HILL RD

WET 01

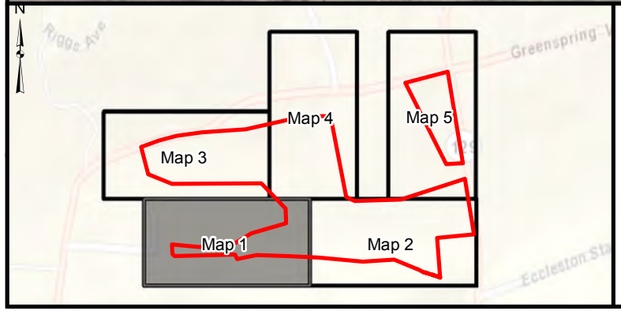
WET 01-SP1

WET 01A

WUS 01

WUS 02

N



Legend

- Study Area
- Existing Structures
- Upland Sample Plot
- Wetland Sample Plot
- 100-Yr Floodplain

Delineated Wetlands

- PEM
- PFO
- PSS
- PUB

- Wetland Buffer

Delineated Streams

- Intermittent
- Perennial

0 50 100 200 Feet

1 " = 100 '

SOURCE: MD IMAP

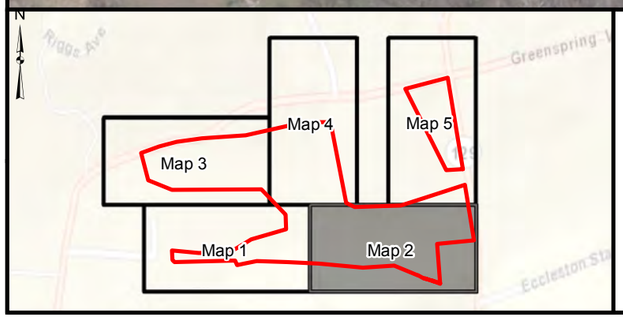
DELINEATED RESOURCE MAP 1

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

DATE: JULY 2019

WUS 21
WUS 20
WET 11
WET 11-UPL
WET 02-SP
WET 02/
WET 03-UPL
WET 02
WUS 03
WET 01-UPL
WET 01-SP3
WET 01
WET 01-SP2
WUS 01
WUS 02
Waterworks
WET 03
WET 02A
WET 04
WET 04-SP1
WET 02-SP2
WET 04-UPL
PARK HEIGHTS AVE
Waterworks Outfall Pipe
WET 05
WUS 05 - Jones Falls
WET 05/WET 06-UPL
WUS 06
WET 06
WET 12
WET 06
WET 06-SP
WET 06-SP2
WUS 13
N



Legend

- Study Area
- Existing Structures
- Upland Sample Plot
- Wetland Sample Plot
- 100-Yr Floodplain

Delineated Wetlands

- PEM
- PFO
- PSS
- PUB

- Wetland Buffer

Delineated Streams

- Intermittent
- Perennial

0 50 100 200 Feet

1 " = 100 '

SOURCE: MD IMAP

DELINEATED RESOURCE MAP 2

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

DATE: JULY 2019

GREENSPRING VALLEY RD

WUS 15

WUS 14

WET 08-SP2

WET 08-SP1

WET 08

WET 08A

WET 07\08-UPL

WUS 09

WUS 03

WET 07

WET 07-SP

WUS 05 - Jones Falls

WUS 10

WUS 12

WUS 07

WET 09

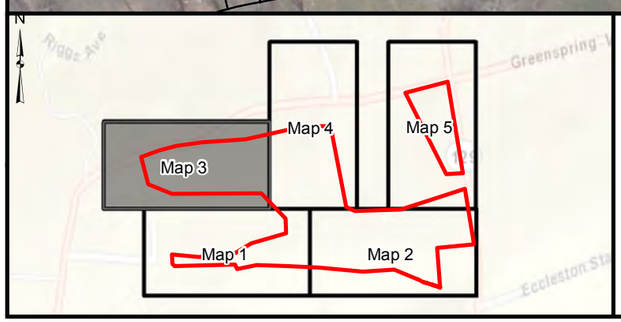
WET 09-UPL

WET 09-SP1

WUS 11

WET 09-SP2

N



Legend

- Study Area
- Existing Structures
- Upland Sample Plot
- Wetland Sample Plot
- 100-Yr Floodplain

Delineated Wetlands

- PEM
- PFO
- PSS
- PUB

- Wetland Buffer

Delineated Streams

- Intermittent
- Perennial

0 50 100 200 Feet

1 " = 100 '

SOURCE: MD IMAP

JMT

DELINEATED RESOURCE MAP 3

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

DATE: JULY 2019

BROOKLAWN RD

GREENSPRING VALLEY RD

Diversion Pipe

WUS 20

Diversion Box

WUS 21

WET 22

WET 21

WET 20/WET 21/WET-22-UPL

WUS 05 - Jones Falls

WET 20

WET 10-UPL

WET 10

WUS 05 - Jones Falls

Waterworks Dam

Waterworks Dam-Backwater

N

Ridge Ave

Greenspring

Map 3

Map 4

Map 5

Map 1

Map 2

Eccleston St

Legend

- Study Area
- Existing Structures
- Upland Sample Plot
- Wetland Sample Plot
- 100-Yr Floodplain

Delineated Wetlands

- PEM
- PFO
- PSS
- PUB

- Wetland Buffer

Delineated Streams

- Intermittent
- Perennial

0 50 100 200 Feet

1 " = 100 '

SOURCE: MD IMAP

JMT

DELINEATED RESOURCE MAP 4

ECCLESTON MITIGATION SITE

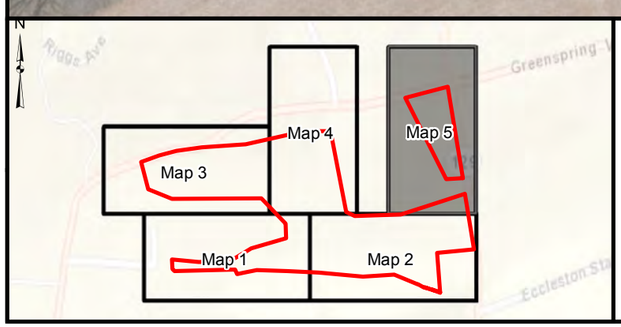
BALTIMORE COUNTY, MD

DATE: JULY 2019

PARK HEIGHTS AVE

WUS 04

GREENSPRING VALLEY RD



Legend

- Study Area
- Existing Structures
- Upland Sample Plot
- Wetland Sample Plot
- 100-Yr Floodplain

Delineated Wetlands

- PEM
- PFO
- PSS
- PUB

- Wetland Buffer

Delineated Streams

- Intermittent
- Perennial

0 50 100 200 Feet

1 " = 100 '

SOURCE: MD IMAP

DELINEATED RESOURCE MAP 5

ECCLESTON MITIGATION SITE

BALTIMORE COUNTY, MD

DATE: JULY 2019

APPENDIX C
WETLAND, UPLAND, AND STREAM DATASHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/5/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 01-SP1

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Riparian | Local relief (concave, convex, none): Concave | Slope (%): 0-1%

Subregion (LRR or MLRA): LRR S | Lat: 39.406653 | Long: -76.735625 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PSS1B/C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [x] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

WET 01 is fed by WUS 01, which has been realigned by the farmer. WUS 01 lacks a channel in this location and has dissipated to form WET 01. This area is dominated by young green ash; another area of PSS occurs along the former channel of WUS 01, and is dominated by willow.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [x] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	3
Water Table Present?	(•) Yes ( ) No	Depth (inches):	0
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0-8

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 01-SP1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Salix nigra*	10	Yes	OBL
3. *Platanus occidentalis*	5	Yes	FACW
4.		Yes / No	
5.		Yes / No	
6.			
7.			
8.			
	20	= Total Cover	

50% of total cover: 10 20% of total cover: 4

Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2. *Rosa multiflora*	5	No	FACU
3. *Ligustrum vulgare*	10	No	FACU
4.		Yes / No	
5.			
6.			
7.			
8.			
	65	= Total Cover	

50% of total cover: 32.5 20% of total cover: 13

Herb Stratum (Plot size:)			
1. *Ficaria verna*	20	Yes	FAC
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	

50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
		= Total Cover	

50% of total cover: 20% of total cover:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 01-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	95	10YR 3/6	5	C	M	Silty clay	
6-12	10YR 4/1	100					Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 01-SP2

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 0-2%

Subregion (LRR or MLRA): LRR S | Lat: 39.406907 | Long: -76.734851 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1/5A

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [x] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	( ) Yes (•) No	Depth (inches):	
Water Table Present?	( ) Yes (•) No	Depth (inches):	
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0.5-8

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 01-SP2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Phragmites australis*	75	● Yes ○ No	FACW
2. *Ficaria verna*	15	○ Yes ● No	FAC
3. *Lonicera japonica*	5	○ Yes ● No	FACU
4. *Boehmeria cylindrica*	5	○ Yes ● No	FACW
5. Unknown grass	10	○ Yes ● No	
6.		○ Yes ○ No	
7.			
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		

50% of total cover: 55 20% of total cover: 22

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 01-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	95	10YR 4/4	5	C	PL	Silty clay	
6-15	2.5Y 5/2	85	10YR 4/6	15	C	M	Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/6/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 01-SP3

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): NAD83 Lat: 39.407082 Long: -76.734713 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: PFO1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? (•) Yes ( ) No Hydric Soil Present? (•) Yes ( ) No Wetland Hydrology Present? (•) Yes ( ) No	**Is the Sampled Area within a Wetland?** (•) Yes ( ) No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ( ) Yes (•) No Depth (inches): _____

Water Table Present? ( ) Yes (•) No Depth (inches): _____

Saturation Present? (includes capillary fringe) (•) Yes ( ) No Depth (inches): 0-4

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 01-SP3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	40	Yes	FACW
2. *Acer saccharinum*	5	No	FACW
3.		No	
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		

Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2. *Ligustrum vulgare*	40	Yes	FACU
3. *Rosa multiflora*	5	No	FACU
4.		No	
5.			
6.			
7.			
8.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		

Herb Stratum (Plot size:)			
1. *Symplocarpus foetidus*	20	Yes	OBL
2. *Ficaria verna*	70	Yes	FAC
3. *Ligustrum vulgare*	10	No	FACU
4.		No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.		No	
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 01- SP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 4/1	95	10YR 4/4	5	C	PL	Silty clay	
2-8+	5Y 5/1	80	7.5YR 4/4	20	C	M	Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 8

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/6/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 01-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0-1

Subregion (LRR or MLRA): LRR S Lat: 39.407187 Long: -76.734667 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 01-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2. *Acer saccharinum*	20	Yes	FACW
3. *Acer negundo*	15	Yes	FAC
4. Cherry sp	5	No	N/A
5.		No	
6.			
7.			
8.			
	60	= Total Cover	
50% of total cover: 30		20% of total cover: 12	

Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	15	Yes	FACU
2. *Rosa multiflora*	5	Yes	FACU
3.		No	
4.			
5.			
6.			
7.			
8.			
	20	= Total Cover	
50% of total cover: 10		20% of total cover: 4	

Herb Stratum (Plot size:)			
1. *Ficaria verna*	90	Yes	FAC
2. *Ligustrum vulgare*	5	No	FACU
3.		No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
50% of total cover: 47.5		20% of total cover: 19	

Woody Vine Stratum (Plot size:)			
1. *Hedera helix*	20	Yes	FACU
2.		No	
3.			
4.			
5.			
	20	= Total Cover	
50% of total cover: 10		20% of total cover: 4	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.143 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 01-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/3	100					Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 02-SP

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.407265 | Long: -76.733776 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PFO1/PEM1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [x] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Likely fed by broken waterworks pipe that also feeds WUS 03; also by runoff from fields and occassional floodflow from Jones Falls. Southern half of wetland is is located in a clearing and can be considered emergent; other than lack of trees, it shows the same characteristics as the rest of the wetland.

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)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 02-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	40	Yes	FACW
2. *Acer negundo*	35	Yes	FAC
3.		Yes	
4.			
5.			
6.			
7.			
8.			
	75	= Total Cover	
50% of total cover: 37.5		20% of total cover: 15	

Sapling/Shrub Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ligustrum vulgare*	40	Yes	FACU
2. *Acer negundo*	20	Yes	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4. *Rosa multiflora*	5	No	FACU
5.		Yes	
6.			
7.			
8.			
	70	= Total Cover	
50% of total cover: 35		20% of total cover: 14	

Herb Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ficaria verna*	60	Yes	FAC
2. *Symplocarpus foetidus*	20	Yes	OBL
3. *Ligustrum vulgare*	5	No	FACU
4. Unknown grass	5	No	N/A
5.		Yes	
6.		Yes	
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
50% of total cover: 45		20% of total cover: 18	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Toxicodendron radicans*	5	Yes	FAC
2.		Yes	
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2.5		20% of total cover: 1	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.714 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 02-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	95	10YR 4/4	5	C	Pl	Silty clay	
4-15	10YR 4/1	90	10YR 4/6	10	C	M	Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 03-SP

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-4

Subregion (LRR or MLRA): LRR S | Lat: 39.407045 | Long: -76.732971 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Fed by runoff from field. Likely connected by subsurface flow to Jones Falls. Evidence of amphibian breeding observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water Stained Leaves (B9)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	6
Water Table Present?	(•) Yes ( ) No	Depth (inches):	0
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

Frog eggs present

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 03-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	15	● Yes ○ No	FACW
2. *Juncus effusus*	10	● Yes ○ No	FACW
3. *Rosa multiflora*	5	○ Yes ● No	FACU
4. *Carex* sp.	5	○ Yes ● No	N/A
5.		○ Yes ○ No	
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35 = Total Cover		

50% of total cover: 17.5 20% of total cover: 7

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 03-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	GLEY1 6/N	90	10YR 5/4	10	C	M	Sandy clay	
5-9	10YR 3/9	95	10YR 3/4	5	C	M	Sandy clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/6/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 02/WET 03-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0-3

Subregion (LRR or MLRA): LRR S Lat: 39.407179 Long: -76.734186 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 02/WET 03-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	5	○ Yes ● No	FACU
2. *Acer negundo*	30	● Yes ○ No	FAC
3. *Juglans nigra*	10	○ Yes ● No	FACU
4. *Fraxinus pennsylvanica*	20	● Yes ○ No	FACW
5.		○ Yes ○ No	
6.			
7.			
8.			
	65	= Total Cover	
50% of total cover: 32.5		20% of total cover: 13	

Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	30	● Yes ○ No	FACU
2. *Acer negundo*	20	● Yes ○ No	FAC
3.		○ Yes ○ No	
4.			
5.			
6.			
7.			
8.			
	50	= Total Cover	
50% of total cover: 25		20% of total cover: 10	

Herb Stratum (Plot size:)			
1. *Ficaria verna*	80	● Yes ○ No	FACW
2. Unknown grass	5	○ Yes ● No	
3. *Ligustrum vulgare*	5	○ Yes ● No	FACU
4. *Galanthus nivalis*	2	○ Yes ● No	
5. *Narcissus* sp.	2	○ Yes ● No	
6.		○ Yes ○ No	
7.			
8.			
9.			
10.			
11.			
12.			
	94	= Total Cover	
50% of total cover: 47		20% of total cover: 18.8	

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 02/WET 03-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/2	100					Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ● No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 04-SP1

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.407581 | Long: -76.729951 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PFO1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Sample plot for the PFO portion of a PFO/PEM wetland complex that is fed by runoff from the adjacent farm fields and road, as well as groundwater. WET 04 is drained by a culvert that is currently partially blocked and backwatered, causing ponding in the wetland. This wetland is likely connected to Jones Falls through subsurface flow.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [x] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	4
Water Table Present?	(•) Yes ( ) No	Depth (inches):	8
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 04-SP1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3. *Fagus grandifolia*	5	No	FACU
4. *Quercus alba*	5	No	FACU
5. *Acer negundo*	5	No	FAC
6. *Liriodendron tulipifera*	5	No	FACU
7.			
8.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		

Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	10	Yes	FACU
2. *Fagus grandifolia*	5	Yes	FACU
3. *Acer negundo*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

Herb Stratum (Plot size:)			
1. *Symplocarpus foetidus*	20	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.667 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 04-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 4/1	95	2.5Y 4/4	5	C	M	Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): 12

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 04-SP2

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.407574 | Long: -76.729992 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1B/C

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Eastern half of PEM area dominated by reed canary grass; sample plot was taken in western half.

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	◉ Yes ○ No	Depth (inches):	6
Water Table Present?	◉ Yes ○ No	Depth (inches):	0
Saturation Present? (includes capillary fringe)	◉ Yes ○ No	Depth (inches):	0-8

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 04-SP2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Boehmeria cylindrica*	30	● Yes ○ No	FACW
2. *Symplocarpus foetidus*	30	● Yes ○ No	OBL
3. *Scirpus cyperinus*	30	● Yes ○ No	FACW
4. Grass sp.	10	○ Yes ● No	
5.		○ Yes ○ No	
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 04-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 2.5/1	100					Mucky silt	
10-14+	2.5Y 2.5/1	100					Mucky loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/6/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 04-UPL

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.407364 | Long: -76.729833 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	○ Yes ◉ No	Depth (inches):	
Water Table Present?	○ Yes ◉ No	Depth (inches):	
Saturation Present? (includes capillary fringe)	○ Yes ◉ No	Depth (inches):	

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 04-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Ulmus americana*	5	No	FACW
3. *Quercus alba*	40	Yes	FACU
4. *Fagus grandifolia*	10	No	FACU
5. *Aesculus hippocastanum*	10	No	
6.		No	
7.			
8.			
	85	= Total Cover	
50% of total cover: 42.5		20% of total cover: 17	

Sapling/Shrub Stratum (Plot size:)			
1. *Acer negundo*	20	Yes	FAC
2.		No	
3.			
4.			
5.			
6.			
7.			
8.			
	20	= Total Cover	
50% of total cover: 10		20% of total cover: 4	

Herb Stratum (Plot size:)			
1. *Rosa multiflora*	2	No	FACU
2. *Hedera helix*	5	Yes	FACU
3. *Ficaria verna*	5	Yes	FACW
4.		No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	= Total Cover	
50% of total cover: 6		20% of total cover: 2.4	

Woody Vine Stratum (Plot size:)			
1.		No	
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 04-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	100					Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 8

Hydric Soil Present? ○ Yes ◉ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/9/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 05-SP

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.406898 | Long: -76.730769 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?** (•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No	
Wetland Hydrology Present?	(•) Yes ( ) No	

Remarks:
Likely fed by WUS 06 and tile drains that feed WUS 06, as well as occasional floodflow from Jones Falls.

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)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 05-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Aesculus hippocastanum*	20	Yes	NI
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	10	Yes	FACU
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size:)			
1. *Symplocarpus foetidus*	20	Yes	OBL
2. *Juncus effusus*	5	No	FACW
3. Sedge sp.	10	No	N/A
4. *Boehmeria cylindrica*	5	No	FACW
5. *Ficaria verna*	60	Yes	FAC
6.		Yes / No	
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.667 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 05-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	95	10YR 3/6	5	D	PL	Silty clay	
4-12	5Y 4/1	100					Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/9/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 06-SP1

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.406541 | Long: -76.731423 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1B/C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Fed by runoff from the adjacent farm fields, groundwater, and overflow from Jones Falls. Continues east outside of study area. Includes small patch of Phragmites outside sample plot. Small patches of black willow occur along the wetland fringes.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches): 2
Water Table Present?	(•) Yes ( ) No	Depth (inches): 3
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches): 8

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 06-SP1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Phalaris arundinacea*	30	● Yes ○ No	FACW
2. *Juncus effusus*	30	● Yes ○ No	FACW
3. *Boehmeria cylindrica*	15	○ Yes ● No	FACW
4. *Ficaria verna*	10	○ Yes ● No	FAC
5. Grass sp.	10	○ Yes ● No	N/A
6. Sedge sp.	5	○ Yes ● No	N/A
7.		○ Yes ○ No	
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 06-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 5/2	90	10YR 4/6	10	C	M	Silty clay	
8-15	2.5Y 5/1	85	10YR 3/6	15	C	M	Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains & Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 05/23/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 06-SP2

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Convex | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.406285 | Long: -76.730375 | Datum: NAD 83

Soil Map Unit Name: MmA – Melvin silt loam, 0 to 3 percent slopes | NWI classification: PFO1B/C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 0.5

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Sampling Point: WET 06-SP2

VEGETATION (Four Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liriodendron tulipifera*	10	No	FACU
2. *Fraxinus pennsylvanica*	60	Yes	FACW
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	75 =	Total Cover	

Sapling/Shrub Stratum (Plot Size: 15')			
1.			
2.			
3.			
4.			
5.			
16.			
7.			
8.			
9.			
10.			
	=	Total Cover	

Herb Stratum (Plot Size: 5')			
1. *Symplocarpus foetidus*	80	Yes	OBL
2. *Agrostis stolonifera*	15	No	FACW
3. *Rosa multiflora*	10	No	FACU
4. *Boehmeria cylindrica*	2	No	FACW
5. *Parthenocissus quinquefolia*	2	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
109 =	Total Cover		

Woody Vine Stratum (Plot Size: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
	=	Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

____ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

____ 3 – Prevalence Index is ≤ 3.0[1]

____ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 06-SP2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	95	10YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/9/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 05/WET 06-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRR S Lat: 39.406948 Long: -76.730653 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☒ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 05/WET 06-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Robinia pseudoacacia*	10	Yes / No	FACU
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		

Sapling/Shrub Stratum (Plot size:)			
1. *Aesculus hippocastanum*	10	Yes / No	N/A
2. *Ligustrum vulgare*	50	Yes / No	FACU
3. *Acer negundo*	20	Yes / No	FAC
4.		Yes / No	
5.			
6.			
7.			
8.			
	80	= Total Cover	
50% of total cover: 40	20% of total cover: 16		

Herb Stratum (Plot size:)			
1. *Ficaria verna*	80	Yes / No	FAC
2. *Symplocarpus foetidus*	20	Yes / No	OBL
3.		Yes / No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
50% of total cover: 50	20% of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 05/WET 06-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/2	100					Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ● No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/8/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 07-SP

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.409145 | Long: -76.737341 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PFO1B/C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:
Fed by runoff from adjacent hill slope, groundwater, and occassional floodflow. Flows into WUS 07 and Jones Falls.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 07-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2.		No	
3.		No	
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	30	Yes	FACU
2. *Acer negundo*	5	No	FAC
3.		No	
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size:)			
1. *Symplocarpus foetidus*	40	Yes	OBL
2. *Boehmeria cylindrica*	10	No	FACW
3. *Ficaria verna*	10	No	FAC
4.		No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans*	5	Yes	FAC
2.		No	
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 07-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					Mucky silt	
2-6	10YR 4/1	95	10YR 3/6	5	C	M	Mucky clay	
6-11	2.5Y 5/2	80	10YR 5/6	20	C	M	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/9/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 08-SP1

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Toe of slope | Local relief (concave, convex, none): Concave | Slope (%): 0-2

Subregion (LRR or MLRA): LRR S | Lat: 39.409135 | Long: -76.739439 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PFO1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Fed by a small culvert and unmanaged road runoff, as well as precipitation. Flows into Jones Falls.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 08-SP1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	10	○ Yes ● No	FACW
2. *Acer rubrum*	50	● Yes ○ No	FAC
3.		○ Yes ○ No	
4.		○ Yes ○ No	
5.			
6.			
7.			
8.			
	60	= Total Cover	
50% of total cover: 30		20% of total cover: 12	

Sapling/Shrub Stratum (Plot size:)			
1. *Liquidambar styraciflua*	10	● Yes ○ No	FAC
2. *Rosa multiflora*	2	○ Yes ● No	FACU
3. *Ligustrum vulgare*	2	○ Yes ● No	FACU
4.		○ Yes ○ No	
5.			
6.			
7.			
8.			
	14	= Total Cover	
50% of total cover: 7		20% of total cover: 2.8	

Herb Stratum (Plot size:)			
1. *Boehmeria cylindrica*	10	○ Yes ● No	FACW
2. *Symplocarpus foetidus*	10	○ Yes ● No	OBL
3. *Ficaria verna*	15	● Yes ○ No	FAC
4. Unidentified grass	20	● Yes ○ No	N/A
5. *Juncus effusus*	5	○ Yes ● No	FACW
6.		○ Yes ○ No	
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
50% of total cover: 30		20% of total cover: 12	

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 08-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14+	2.5Y 4/1	90	5YR 4/6	10	C	M	Silty clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/9/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 08-SP2

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.409122 | Long: -76.739846 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1A/B

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Fed by roadside culvert and runoff.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [x] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 08-SP2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Carex stricta*	50	● Yes ○ No	OBL
2. *Juncus effusus*	10	○ Yes ● No	FACW
3. *Symplocarpus foetidus*	30	● Yes ○ No	OBL
4.		○ Yes ○ No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 08-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/1	100					Silty clay	Upper in feel mucky
6-10	2.5Y 5/1	90	2.5Y 3/1	10	D	M	Sandy clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/9/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 07/WET-08-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3-5

Subregion (LRR or MLRA): LRR S Lat: 39.409185 Long: -76.738327 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 07/WET-08-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	25	Yes	FACU
2. *Acer rubrum*	50	Yes	FAC
3. *Liriodendron tulipifera*	10	No	FACU
4.		No	
5.			
6.			
7.			
8.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		

Sapling/Shrub Stratum (Plot size:)			
1. *Acer rubrum*	10	Yes	FAC
2. *Ligustrum vulgare*	2	No	FACU
3.		No	
4.			
5.			
6.			
7.			
8.			
	12 = Total Cover		
50% of total cover: 6	20% of total cover: 2.4		

Herb Stratum (Plot size:)			
1. *Ficaria verna*	98	Yes	FAC
2. *Lonicera japonica*	2	No	FACU
3.		No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		

Woody Vine Stratum (Plot size:)			
1. *Hedera helix*	5	Yes	FACU
2.		No	
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 07/WET-08-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/3	98	10YR 3/6	2	C	M	Clay loam	
6-15+	10YR 5/4	90	10YR 4/6	10	C	M	Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/12/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 09-SP1

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.408301 | Long: -76.739739 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PEM1B/C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

Fed by groundwater and runoff from adjacent farm fields. Flows into Jones Falls as well as WUS 11 and WUS 12.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 09-SP1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	20	● Yes ○ No	FACU
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size:)			
1. *Juncus effusus*	10	○ Yes ● No	FACW
2. *Symplocarpus foetidus*	30	● Yes ○ No	OBL
3. *Leersia oryzoides*	30	● Yes ○ No	OBL
4. *Carex stricta*	5	○ Yes ● No	OBL
5. *Ligustrum vulgare*	5	○ Yes ● No	FACU
6. *Boehmeria cylindrica*	10	○ Yes ● No	FACW
7.		○ Yes ○ No	
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.667 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 09-SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 2.5/1	100					Mucky Silt	
1-10	7.5YR 2.5/1	100					Silty Clay	
10-14	7.5YR 2.5/1	95	7.5YR 4/4	5	C	M	Silty Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 14

Hydric Soil Present? ◉ Yes ○ No

Remarks:

Point of refusal at 14 inches; depleted matrix assumed to be present below observed layers

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/12/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 09-SP2

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.408202 | Long: -76.739042 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes | NWI Classification: PFO1A/B/C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	6
Water Table Present?	(•) Yes ( ) No	Depth (inches):	0
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 09-SP2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	20	Yes	FACW
2. *Fraxinus pennsylvanica*	10	No	FACW
3. *Acer rubrum*	10	No	FAC
4. *Acer saccharinum*	30	Yes	FACW
5.		No	
6.			
7.			
8.			
	70	= Total Cover	
50% of total cover: 35		20% of total cover: 14	

Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	30	Yes	FACU
2. *Rosa multiflora*	15	Yes	FACU
3.		No	
4.			
5.			
6.			
7.			
8.			
	45	= Total Cover	
50% of total cover: 22.5		20% of total cover: 9	

Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Boehmeria cylindrica*	20	Yes	FACW
3. *Ligustrum vulgare*	10	No	FACU
4. *Leersia oryzoides*	20	Yes	OBL
5. *Symplocarpus foetidus*	10	No	OBL
6. *Lonicera japonica*	15	No	FACU
7. *Carex stricta*	5	No	OBL
8.		No	
9.			
10.			
11.			
12.			
	100	= Total Cover	
50% of total cover: 50		20% of total cover: 20	

Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans*	10	Yes	FAC
2. *Smilax rotundifolia*	10	Yes	FAC
3.		No	
4.			
5.			
	20	= Total Cover	
50% of total cover: 10		20% of total cover: 4	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.778 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0*
- [ ] 4 - Morphological Adaptations*
- [ ] Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes / No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 09-SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	5Y 4/1	80	10YR 4/6	20	C	M	Sandy Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 14

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 3/12/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 09-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRR S Lat: 39.408448 Long: -76.738239 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0 to 3 percent slopes NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 09-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2.		No	
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum (Plot size:)			
1. *Ilex opaca*	20	Yes	FACU
2. *Ligustrum vulgare*	10	No	FACU
3. *Berberis thunbergii*	20	Yes	FACU
4. *Rosa multiflora*	15	Yes	FACU
5.		No	
6.			
7.			
8.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size:)			
1. *Hedera helix*	5	No	FACU
2. *Microstegium vimineum*	20	Yes	FAC
3. *Lonicera japonica*	5	No	FACU
4.		No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size:)			
1.		No	
2.		No	
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ○ Yes ● No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 09-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 5/3	70	2.5Y 4/1	30	D	M	Clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 3/12/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 10-SP

Investigator(s): CJ, AS | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.408919 | Long: -76.736086 | Datum: NAD83

Soil Map Unit Name: QM - Quarries, marble, active/inactive | NWI Classification: PUB3H

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [x] Vegetation [x] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

WET 10 is fed by groundwater. The wetland is an abandoned quarry which contains a lot of trash and debris. Algae was observed floating on top of the wetland.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	3
Water Table Present?	(•) Yes ( ) No	Depth (inches):	0.5
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0-8

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 10-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.		○ Yes ○ No	
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.		○ Yes ○ No	
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1.		○ Yes ○	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: 20% of total cover:

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☒ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ◉ Yes ○ No

Remarks: (If observed, list morphological adaptations below).

No terrestrial vegetation located within PUB due to deep standing water. Duckweed was observed

SOIL

Sampling Point: WET 10-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☒ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

Hydric soils can be assumed in cases of permanently standing water

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson , Baltimore Sampling Date: 3/12/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 10-UPL

Investigator(s): CJ, AS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR or MLRA): LRR S Lat: 39.408890 Long: -76.736117 Datum: NAD83

Soil Map Unit Name: QM - Quarries, marble, active/inactive NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 10-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Robinia pseudoacacia*	20	Yes	FACU
2. *Acer negundo*	20	Yes	FAC
3. *Morus alba*	10	Yes	UPL
4.		Yes / No	
5.			
6.			
7.			
8.			
	50	= Total Cover	

50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum (Plot size:)			
1. *Ligustrum vulgare*	20	Yes	FACU
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
	20	= Total Cover	

50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot size:)			
1. *Lonicera japonica*	25	Yes	FACU
2. *Hedera helix*	20	Yes	FACU
3. *Microstegium vimineum*	30	Yes	FAC
4.		Yes / No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	

50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
		= Total Cover	

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 29 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ○ Yes ● No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 10-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/4	100					Silt Loam	
12-20	10YR 5/5	50					Silt Loam	
	7.5YR 6/6	50						

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains & Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 5/23/18

Applicant/Owner: JMT | State: MD | Sampling Point: WET 11-SP

Investigator(s): ERM, MEM | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.401395 | Long: -76.750227 | Datum: NAD 83

Soil Map Unit Name: MmA – Melvin silt loam, 0 to 3 percent slopes | NWI classification: PEM1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches):	3	
Water Table Present?	Yes X	No _____	Depth (inches):	3	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches):	0	**Wetland Hydrology Present?** Yes X No _____

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

Remarks:
Wetland receives hydrology from farm field runoff. Surface water and saturation present. Located in the Jones Falls floodplain between WUS 20 and WUS 21.

Sampling Point: WET 11-SP

VEGETATION (Four Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot Size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Herb Stratum (Plot Size: 5')			
1. *Boehmeria cylindrica*	5	No	FACW
2. *Carex stricta*	30	Yes	OBL
3. *Carex lurida*	10	No	OBL
4. *Microstegium vimineum*	15	Yes	FAC
5. *Impatiens capensis*	10	No	FACW
6. *Agrostis stolonifera*	15	Yes	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		
Woody Vine Stratum (Plot Size: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes x No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 11-SP

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/2	95	2.5Y 4/4	5	C	M	Sandy clay loam	
3-10	2.5Y 5/1	90	10YR 4/3	10	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains & Piedmont

Project/Site: Eccleston City/County: Stevenson, Baltimore Sampling Date: 5/23/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 11-UPL

Investigator(s): ERM, MEM Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR S Lat: 39.407426 Long: -76.734525 Datum: NAD 83

Soil Map Unit Name: MmA – Melvin silt loam, 0 to 3 percent slopes NWI classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____		
Water Table Present?	Yes _____	No X	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____	**Wetland Hydrology Present?**	Yes _____ No X

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

Remarks:

Sampling Point: WET 11-UPL

VEGETATION (Four Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot Size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Herb Stratum (Plot Size: 5')			
1. *Aegopodium podagraria*	60	Yes	FACU
2. *Carex sp.*	20	Yes	NA
3. *Agrostis stolonifera*	10	No	FACW
4. *Impatiens capensis*	5	No	FACW
5. *Aesculus hippocastanum*	2	No	NA
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	97 = Total Cover		
Woody Vine Stratum (Plot Size: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species	x1=
FACW species	x2=
FAC species	x3=
FACU species	x4=
UPL species	x5=
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 – Rapid Test for Hydrophytic Vegetation

____ 2 – Dominance Test is > 50%

____ 3 – Prevalence Index is ≤ 3.0[1]

____ 4 – Morphological Adaptations[1](Provide supporting data in Remarks or separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 11-UPL

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	10YR 4/2	100					Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains & Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 5/3/19

Applicant/Owner: JMT | State: MD | Sampling Point: WET 12-SP

Investigator(s): AS, CJ | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5-8

Subregion (LRR or MLRA): LRR S | Lat: 39.40630 | Long: -76.73447 | Datum: NAD 83

Soil Map Unit Name: WhB – Wiltshire silt loam, 3 to 8 percent slopes | NWI classification: PEM1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____ Soil ____ or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area Within a Wetland?**	Yes X	No ____
Hydric Soil Present?	Yes X	No ____			
Wetland Hydrology Present?	Yes X	No ____			

Remarks: WUS 13 flows through and provides hydrology to WET 12. Wetland is located in the middle of an actively farmed field. Tracks intersect the northern portion of the wetland, cutting off natural hydrologic flow. Hydrology is redirected east as sheet flow across the farm field; this area was not considered part of the wetland, as it lacked hydric soils. Sheet flow dissipates near the edge of the forest, but there is likely a subsurface connection with WUS 02 in this area.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	4	
Water Table Present?	Yes X	No ____	Depth (inches):	10	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	surface	**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

Sampling Point: WET 12-SP

VEGETATION (Four Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30’)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size: 15’)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=	Total Cover	

Herb Stratum (Plot Size: 5’)			
1. *Juncus effusus*	15	N	FACW
2. *Panicum virgatum*	40	Y	FAC
3. *Polygonum sagittatum*	20	Y	OBL
4. *Impatiens capensis*	10	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 =	Total Cover	

Woody Vine Stratum (Plot Size: 30’)			
1.			
2.			
3.			
4.			
5.			
6.			
	=	Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 12-SP

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/2	95	7.5YR 4/4	5	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 15

Hydric Soil Present? Yes X No ___

Remarks:

Soils are saturated in upper 4 inches. Below 4 inches, soil became drier, grittier. Profile is consistent throughout entire sample.

WETLAND DETERMINATION DATA FORM – Eastern Mountains & Piedmont

Project/Site: Eccleston | City/County: Stevenson, Baltimore | Sampling Date: 5/3/19

Applicant/Owner: JMT | State: MD | Sampling Point: WET 12-UPL

Investigator(s): AS, CJ | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5-8

Subregion (LRR or MLRA): LRR S | Lat: 39.40631 | Long: -76.73434 | Datum: NAD 83

Soil Map Unit Name: WhB – Wiltshire silt loam, 3 to 8 percent slopes | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____		
Water Table Present?	Yes _____	No X	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____	**Wetland Hydrology Present?**	Yes _____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WET 12-UPL

Tree Stratum (Plot size: 30’)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Sapling/Shrub Stratum (Plot Size: 15’)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Herb Stratum (Plot Size: 5’)			
1. *Arabidopsis thaliana*	5	Y	NI
2. *Veronica peregrina*	5	Y	FAC
3. *Oxalis stricta*	5	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15 = Total Cover		
Woody Vine Stratum (Plot Size: 30’)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

____ 1 – Rapid Test for Hydrophytic Vegetation

____ 2 – Dominance Test is > 50%

____ 3 – Prevalence Index is ≤ 3.0[1]

____ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 12-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston | City/County: Owings Mills, Baltimore | Sampling Date: 3/12/2018

Applicant/Owner: JMT | State: MD | Sampling Point: WET 20-SP

Investigator(s): CJ, AS | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 0-1

Subregion (LRR or MLRA): LRR S | Lat: 39.408444 | Long: -76.735975 | Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0-3% slopes | NWI Classification: PEM1Cf

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [x] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? ( ) Yes (•) No

Are [ ] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

WET 20 is located in a corn field, fed by runoff, and is being actively farmed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	2
Water Table Present?	( ) Yes (•) No	Depth (inches):	
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0-9

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 20-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1. *Sorghum halepense*	30	● Yes ○ No	FACU
2. *Zea mays*	20	● Yes ○ No	NI
3. *Setaria pumila*	40	● Yes ○ No	FAC
4.		○ Yes ○ No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.000 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	70 (A)		240 (B)

Prevalence Index = B/A = 3.429

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☒ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

Wetland actively farmed.

SOIL

Sampling Point: WET 20-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/2	90	10YR 5/6	10	C	M	Clay	
9-20	10YR 2/1	90	10YR 6/8	10	C	M	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson ,Baltimore Sampling Date: 3/12/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 21-SP

Investigator(s): CJ, AS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR S Lat: 39.407859 Long: -76.735290 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0-3% slopes NWI Classification: PEM1Cf

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☒ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ○ Yes ◉ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

WET 21 is located in a corn field, fed by groundwater and is being actively farmed.

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 21-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		Yes / No	
2.		Yes / No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Sorghum halepense*	30	Yes / No	FACU
2. *Zea mays*	15	Yes / No	NI
3. *Setaria pumila*	20	Yes / No	FAC
4.		Yes / No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum (Plot size:)			
1.		Yes / No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.000 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	70 (A)		240 (B)

Prevalence Index = B/A = 3.429

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☒ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ○ Yes ● No

Remarks: (If observed, list morphological adaptations below).

Wetland actively farmed.

SOIL

Sampling Point: WET 21-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3	100					Sandy Clay Loam	
3-14+	10YR 6/1	50	7.5YR 6/8	15	C	M	Sandy Loam	
	10YR 6/4	30	10YR 2/1	10	D	M		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson , Baltimore Sampling Date: 3/12/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 22-SP

Investigator(s): CJ, AS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3

Subregion (LRR or MLRA): LRR S Lat: 39.408732 Long: -76.734921 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0-3% slopes NWI Classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? (•) Yes ( ) No (If no, explain in Remarks.)

Are [ ] Vegetation [ ] Soil [ ] Hydrology significantly disturbed? Are "Normal Circumstances" present? (•) Yes ( ) No

Are [x] Vegetation [ ] Soil [ ] Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	(•) Yes ( ) No	**Is the Sampled Area within a Wetland?**	(•) Yes ( ) No
Hydric Soil Present?	(•) Yes ( ) No		
Wetland Hydrology Present?	(•) Yes ( ) No		

Remarks:

WET 22 abuts WUS 21 and receives hydrology from WUS 21. The wetland also abuts an actively farmed field and contains problematic vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] Water Stained Leaves (B9)
- [x] 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	(•) Yes ( ) No	Depth (inches):	0-6
Water Table Present?	( ) Yes (•) No	Depth (inches):	
Saturation Present? (includes capillary fringe)	(•) Yes ( ) No	Depth (inches):	0-8

Wetland Hydrology Present? (•) Yes ( ) No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 22-SP

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.		○ Yes ○ No	
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Rosa multiflora*	5	○ Yes ● No	FACU
2. *Juncus effusus*	20	● Yes ○ No	FACW
3. *Polygonum sagittatum*	30	● Yes ○ No	OBL
4. *Boehmeria cylindrica*	15	○ Yes ● No	FACW
5. *Leersia virginica*	10	○ Yes ● No	FACW
6.		○ Yes ○ No	
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		

50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ● Yes ○ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 22-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	95	10YR 2/1	5	D	M	Silty Clay	
10-20	10YR 4/2	95	7.5YR 4/6	5	C	M	Silty Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ◉ Yes ○ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Eccleston City/County: Stevenson , Baltimore Sampling Date: 3/12/2018

Applicant/Owner: JMT State: MD Sampling Point: WET 20/21/22-UPL

Investigator(s): CJ, AS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR or MLRA): LRR S Lat: 39.408231 Long: -76.735736 Datum: NAD83

Soil Map Unit Name: MmA - Melvin silt loam, 0-3% slopes NWI Classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? ◉ Yes ○ No (If no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

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)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ 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)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	○ Yes ◉ No	Depth (inches):	
Water Table Present?	○ Yes ◉ No	Depth (inches):	
Saturation Present? (includes capillary fringe)	○ Yes ◉ No	Depth (inches):	

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 20/21/22-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. *Zea mays*	80	● Yes ○ No	NI
2. *Sorghum halepense*	10	○ Yes ● No	FACU
3.		○ Yes ○ No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size:)			
1.		○ Yes ○ No	
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: 20% of total cover:

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.000 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0*
- ☐ 4 - Morphological Adaptations*
- ☐ Problematic Hydrophytic Vegetation* (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? ○ Yes ● No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 20/21/22-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/4	100					Silt Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ● No

Remarks:

Stream Datasheet

Project: Eccleston **Date:** 3/5/18 **Stream ID:** WUS 01

Staff: EM, MM **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: East **Drains Into:** Wet 01/ Jones Falls

Fed By: Continues offsite

Bank Height: 1 ft **Water Depth:** 6-24 inches **Width:** 6 ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Hydrology has been extremely altered by farming activity. Loses channel at Wet 01, reappears as drainage pattern periodically before entering Jones Falls. Reforms partway through WET 01, barely channelized until last 6 flags or so – then becomes incised as it erodes down to meet Jones Falls.

Project: Eccleston **Date:** 3/5/18 **Stream ID:** WUS 02

Staff: EM, MM **Flow Type:** Perennial ☒ Intermittent ☒ Ephemeral ☐

Flow Direction: East **Drains Into:** Jones Falls

Fed By: Runoff from farm field, Wet 01

Bank Height: 1-2.5ft **Water Depth:** 4-18 inches **Width:** 2-4 ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 3/6/18 **Stream ID:** WUS 03

Staff: EM, MM **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: SE **Drains Into:** Jones Falls

Fed By: Broken waterworks pipe

Bank Height: ½-1ft **Water Depth:** 2-12" **Width:** 1-5ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Contains watercress, bordered by WET 02.

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 04

Staff: CJ, AS **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: S-SE **Drains Into:** WUS 05 (Jones Falls) *Outside of Study Area

Fed By: Groundwater

Bank Height: 2-4ft **Water Depth:** 3-6in **Width:** 2-6ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Stream channel varies in width from the culvert underneath Greenspring Valley Road (approx. 6ft wide) to the culvert under Park Heights Ave (approx. 3ft wide). The banks of WUS 04 are heavily vegetated with briers and vines. The stream is nearly inaccessible just south of Greenspring Valley Drive and west of Park Heights Ave. WUS 04 discharges into Jones Falls outside of the Study Area.

Stream Datasheet

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 05 (Jones Falls)

Staff: CJ, AS **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: E-SE **Drains Into:** Baltimore Inner Harbor

Fed By: Multiple tributaries/groundwater

Bank Height: Varies 2-4ft **Water Depth:** Varies 2-3ft **Width:** Varies – 8ft

Substrate: Cobble ☒ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: WUS 05 (Jones Falls) flows through the entirety of the Study Area; it intersects multiple tributaries and wetlands which feed into the stream. Portions of the stream have been altered or straightened. The banks range as it flows through the project site. The northwest section of the stream contains banks 2-3 feet in height and contain a Bald Cypress patch on either side of its banks. As the stream travels through the site, the banks become wider and gradually more incised.

Project: Eccleston **Date:** 3/9/18 **Stream ID:** WUS 06

Staff: EM, MM **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: North **Drains Into:** Jones Falls

Fed By: Likely tile drains in uphill field, groundwater

Bank Height: ½ -2 ft **Water Depth:** 3 in. **Width:** 2 ft

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 3/9/18 **Stream ID:** WUS 07

Staff: EM, MM **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: South **Drains Into:** Jones Falls

Fed By: WET 07

Bank Height: ½ ft **Water Depth:** 3 in. **Width:** 2 ft.

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Project: Eccleston **Date:** 3/9/18 **Stream ID:** WUS 08

Staff: EM, MM **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: South **Drains Into:** Jones Falls

Fed By: WET 08

Bank Height: 1-2 ft **Water Depth:** 4-6 in. **Width:** 2-3 ft.

Substrate: Cobble ☒ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 09

Staff: EM MM **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: East **Drains Into:** Jones Falls

Fed By: WET 08A

Bank Height: ½ ft **Water Depth:** 3 in. **Width:** 2 ft

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Project: Eccleston **Date:** 3/9/18 **Stream ID:** WUS 10

Staff: EM, MM **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: North **Drains Into:** Jones Falls

Fed By: WET 09

Bank Height: 1-2 ft **Water Depth:** 6 in. **Width:** 2-3 ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 11

Staff: EM, MM **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: East **Drains Into:** Jones Falls

Fed By: WET 09

Bank Height: 1-2 ft **Water Depth:** 3-9 in. **Width:** 2-5 ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Fed by drainage patterns in WET 09

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 12

Staff: EM, MM **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: East **Drains Into:** Jones Falls

Fed By: WET 09

Bank Height: 1 ft **Water Depth:** 3-6 in. **Width:** 2-3 ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Fed by drainage patterns within WET 09

Stream Datasheet

Project: Eccleston **Date:** 5/3/19 **Stream ID:** WUS 13

Staff: AS, CJ **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: North **Drains Into:** WET 12

Fed By: Culvert outside study area

Bank Height: < 6 in. **Water Depth:** 3 in. **Width:** 0.5 – 5 ft

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☒ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Dissipates at edge of field but likely is connected through subsurface flow to WUS 02

Project: Eccleston **Date:** 6/5/19 **Stream ID:** WUS 14

Staff: EM, LS **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: South **Drains Into:** WET 08

Fed By: Culvert

Bank Height: 1-3 ft **Water Depth:** 1-14 in. **Width:** 1-4 ft

Substrate: Cobble ☐ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 5/5/19 **Stream ID:** WUS 15

Staff: EM, LS **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: South **Drains Into:** WET 08

Fed By: Culvert

Bank Height: 1 ft **Water Depth:** 2-4 in. **Width:** 1-2 ft

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments:

Project: **Date:** **Stream ID:**

Staff: **Flow Type:** Perennial ☐ Intermittent ☐ Ephemeral ☐

Flow Direction: **Drains Into:**

Fed By:

Bank Height: **Water Depth:** **Width:**

Substrate: Cobble ☐ Gravel ☐ Sand ☐ Silt ☐ Muck ☐ Veg ☐ Riprap ☐

Photos? Upstream ☐ Downstream ☐

Other Comments:

Stream Datasheet

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 20

Staff: CJ, AS **Flow Type:** Perennial ☒ Intermittent ☐ Ephemeral ☐

Flow Direction: S-SE **Drains Into:** WUS 05 (Jones Falls)

Fed By: Groundwater

Bank Height: 2-4ft **Water Depth:** 3-6in **Width:** 2-15ft

Substrate: Cobble ☒ Gravel ☒ Sand ☒ Silt ☒ Muck ☐ Veg ☒ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Stream varies in width and changes between perennial and ephemeral. Drainage pipe collects flow from WUS 20 and distributes it underground to WUS 22 through a spring box in the middle of the corn field; downstream of this diversion, the stream is dry.

Project: Eccleston **Date:** 3/12/18 **Stream ID:** WUS 21

Staff: CJ, AS **Flow Type:** Perennial ☐ Intermittent ☒ Ephemeral ☐

Flow Direction: South **Drains Into:** WUS 05 (Jones Falls)

Fed By: Water diversion

Bank Height: 1 ft **Water Depth:** 3-6 in. **Width:** 2-6 ft

Substrate: Cobble ☐ Gravel ☐ Sand ☒ Silt ☒ Muck ☒ Veg ☒ Riprap ☐

Photos? Upstream ☒ Downstream ☒

Other Comments: Stream is fed from spring box and receives hydrology from a piped segment of WUS 20. Fish were observed in the stream at the time of the field investigation. Width of stream ranges depending on amount of flow stream receives from WUS 20. However, stream is believed to receive all hydrology from pipe; when pipe has been clogged, stream has been observed to be dry. Likely too high in elevation to have intercepted groundwater.

APPENDIX D
PHOTO DOCUMENTATION

Photo 1: WET 01 (Facing east)

Photo 2: WET 01 (Facing west)

Photo 3: WET 01 (Facing northeast)

Photo 4: WET 01 (Facing southeast)

Photo 5: WET 01-UPL (Facing south)

Photo 6: WET 02 (Facing northeast)

Photo 7: WET 02 (Facing northeast)

Photo 8: WET 02 (Facing north)

Photo 9: WET 02A (Facing west)

Photo 10: WET 03 (Facing northeast)

Photo 11: WET 02/WET 03-UPL Facing south)

Photo 12: WET 02/WET 03-UPL (Facing southeast)

Photo 13: WET 04 (Facing north)

Photo 14: WET 04 (Facing west)

Photo 15: WET 04 (Facing northwest)

Photo 16: WET 04 (Facing east)

Photo 17: WET 04-UPL (Facing east)

Photo 18: WET 04-UPL (Facing west)

Photo 19: WET 05 (Facing north)

Photo 20: WET 05 (Facing southeast)

Photo 21: WET 06-SP1 (Facing west)

Photo 22: WET 06-SP2 (Facing southeast)

Photo 23: WET 05/WET 06-UPL (Facing north)

Photo 24: WET 07 (Facing east)

Photo 25: WET 07 (Facing west)

Photo 26: WET 08-SP1 (Facing east)

Photo 27: WET 08-SP2 (Facing south)

Photo 28: WET 07/WET 08-UPL (Facing east)

Photo 29: WET 07/WET 08-UPL (Facing north)

Photo 30: WET 09-SP1 (Facing North)

Photo 31: WET 09-SP2 (Facing north)

Photo 32: WET 09-SP2 (Facing south)

Photo 33: WET 09-UPL (Facing west)

Photo 34: WET 10 (Facing north)

Photo 35: WET 10 (Facing east)

Photo 36: WET 10 (Facing south)

Photo 37: WET 10 (Facing southwest)

Photo 38: WET 10 (Facing west)

Photo 39: WET 10 (Facing west)

Photo 40: WET 10-UPL (Facing east)

Photo 41: WET 11 (Facing east)

Photo 42: WET 11 (Facing north)

Photo 43: WET 11-UPL (Facing east)

Photo 44: WET 12 (Facing north)

Photo 45: WET 20 (Facing south)

Photo 46: WET 21 (Facing southeast)

Photo 47: WET 21 (Facing south)

Photo 48: WET 21 (Facing northwest)

Photo 49: WET 22 (Facing east)

Photo 50: WET 22 (Facing south)

Photo 51: WET 22 (Facing south)

Photo 52: WET 20/WET 21/WET 22-UPL (Facing north)

Photo 53: WUS 01 downstream (Facing east)

Photo 54: WUS 01 upstream (Facing west)

Photo 55: WUS 01 upstream (Facing west)

Photo 56: WUS 02 downstream (Facing west)

Photo 57: WUS 02 upstream (Facing east)

Photo 58: WUS 02 upstream (Facing east)

Photo 59: WUS 03 upstream (Facing northeast)

Photo 60: WUS 04 downstream (Facing east)

Photo 61: WUS 04 downstream (Facing south)

Photo 62: WUS 04 downstream (Facing south)

Photo 63: WUS 04 upstream (Facing north)

Photo 64: WUS 04 upstream (Facing north)

Photo 65: WUS 04 upstream (Facing north)

Photo 66: WUS 04 upstream (Facing north)

Photo 67: WUS 04 upstream (Facing northwest)

Photo 68: WUS 05 drainage pipe (Facing southwest)

Photo 69: WUS 05 backwater area (Facing east)

Photo 70: WUS 05 downstream (Facing southeast)

Photo 71: WUS 05 downstream (Facing southeast)

Photo 72: WUS 05 downstream (Facing southeast)

Photo 73: WUS 05 downstream (Facing southeast)

Photo 74: WUS 05 downstream (Facing southeast)

Photo 75: WUS 05 downstream (Facing southeast)

Photo 76: WUS 05 island downstream (Facing east)

Photo 77: WUS 05 island (Facing northeast)

Photo 78: WUS 05 upstream (Facing northwest)

Photo 79: WUS 05 upstream (Facing southwest)

Photo 80: WUS 05 upstream (Facing southwest)

Photo 81: WUS 05 upstream (Facing west)

Photo 82: WUS 06 downstream (Facing southeast)

Photo 83: WUS 06 upstream (Facing northwest)

Photo 84: WUS 07 downstream (Facing southeast)

Photo 85: WUS 07 upstream (Facing northwest)

Photo 86: WUS 08 downstream (Facing south)

Photo 87: WUS 08 upstream (Facing north)

Photo 88: WUS 09 downstream (Facing east)

Photo 89: WUS 09 upstream (Facing west)

Photo 90: WUS 10 downstream (Facing south)

Photo 91: WUS 10 upstream (Facing north)

Photo 92: WUS 11 downstream (Facing east)

Photo 93: WUS 12 downstream (Facing east)

Photo 94: WUS 12 upstream (Facing west)

Photo 95: WUS 13 downstream (Facing north)

Photo 96: WUS 13 upstream (Facing south)

Photo 97: WUS 14 downstream (Facing south)

Photo 98: WUS 14 upstream (Facing north)

Photo 99: WUS 15 downstream (Facing south)

Photo 100: WUS 15 upstream (Facing north)

Photo 101: WUS 20 downstream (Facing southeast)

Photo 102: WUS 20 downstream (Facing east)

Photo 103: WUS 20 downstream (Facing east)

Photo 104: WUS 20 downstream (Facing south)

Photo 105: WUS 20 downstream (Facing southeast)

Photo 106: WUS 20 upstream (Facing north)

Photo 107: WUS 20 upstream (Facing northeast)

Photo 108: WUS 20 upstream (Facing northeast)

Photo 109: WUS 20 upstream (Facing northeast)

Photo 110: WUS 20 upstream (Facing northeast)

Photo 111: WUS 21 diversion box (Facing south)

Photo 112: WUS 21 downstream (Facing south)

Photo 113: WUS 21 downstream (Facing south)

Photo 114: WUS 21 downstream (Facing south)

Photo 115: WUS 21 downstream (Facing southeast)

Photo 116: WUS 21 upstream (Facing north)

APPENDIX E
FUNCTIONS AND VALUES DATASHEETS

Wetland Function-Value Evaluation Form

Total area of wetland 1.10 Human made? Yes Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest and farm field Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM, PSS, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 01

Latitude 39.40665 Longitude -76.73563

Prepared by: ERM Date 4/6/18

Wetland Impact:
Type temporary Area 1.10

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	7, 9	Y	WUS 01 dissipates into this wetland and is still developing a defined channel.
Floodflow Alteration	Y	9, 10, 13, 14, 15	Y	Retains/slows substantial amount of flow from WUS 01
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 3, 10, 11, 14		Retains flow from WUS 01, which drains adjacent farm fields, but sediment is being mobilized at the downstream end of the wetland where WUS 01 is developing a channel.
Nutrient Removal	Y	3, 4, 12, 13		See above
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 5, 6, 7	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				"Human made" because wetland receives hydrology from relocated stream.

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.28 Human made? Yes Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest and farm field Distance to nearest roadway or other development 40 ft

Dominant wetland systems present PEM, PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 02

Latitude 39.40727 Longitude -76.73378

Prepared by: ERM Date 4/6/18

Wetland Impact:
Type Temporary Area 0.28

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	7		Wetland is fed by broken waterworks pipe; water from this pipe likely recharges groundwater to some extent
Floodflow Alteration	Y	2, 6, 8, 10		Located within Jones Falls floodplain; likely holds water during extremely large storms, but is largely disconnected from the floodplain
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 4, 5, 6, 7	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.01 Human made? N Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest and farm land Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 03

Latitude 39.40705 Longitude -76.73297

Prepared by: ERM Date 4/6/18

Wetland Impact:
Type Temporary Area 0.01

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge				
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 3, 4, 5		Wetland is very small, so functions contributed to the watershed are limited.
Nutrient Removal	Y	3, 4, 7		See above
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	5, 7, 17		Amphibian eggs were observed; this wetland's small depression full of standing water likely functions as a vernal pool. However, it is likely disturbed by farm equipment
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				Located at edge of farm field

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.84 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, farm field Distance to nearest roadway or other development 30 ft

Dominant wetland systems present PEM, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 04

Latitude 39.40758 Longitude -76.72995

Prepared by: ERM Date 4/6/18

Wetland Impact:
Type Temporary Area 0.84

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	10, 13, 15	Y	Large amounts of standing water present in wetland, appears to be fed by springs
Floodflow Alteration	Y	2, 5, 6, 7, 8, 9, 10, 15		Located within the Jones Falls floodplain, but likely only receives flood flow during extremely large storms; largely disconnected from floodplain.
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 3, 4, 5, 9	Y	
Nutrient Removal	Y	2, 3, 4, 5, 6, 7, 9, 10, 11	Y	
Production Export	Y	2, 10		
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	1, 3, 5, 7, 8, 9, 11, 13, 20	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.03 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest Distance to nearest roadway or other development 200 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 05

Latitude 39.40690 Longitude -76.73077

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.03

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	7		Located downslope from WET 06, seems likely that subsurface flow from that wetland is daylighting in this location
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 4, 6, 7		Wetland is too small to provide substantial wildlife habitat
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.36 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Farm and forest Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM/PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 06

Latitude 39.40654 Longitude -76.73142

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.78

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5, 10, 13	Y	This wetland appears to be substantially by groundwater; while there is a connection to Jones Falls, water from Jones Falls only flows into the wetland during high flow.
Floodflow Alteration	Y	5, 6, 8, 9, 13	Y	Connection can be observed with Jones Falls; during periods of high flow, wetland receives overflow from the stream.
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 3, 4, 10	Y	
Nutrient Removal	Y	3, 4, 5, 7, 8, 9, 10	Y	
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 5, 7, 8, 9, 11, 13, 20	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.40 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest and farm land Distance to nearest roadway or other development 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 07

Latitude 39.40915 Longitude -76.73734

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.40

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5, 10, 13	Y	Wetland appears to primarily be fed by groundwater
Floodflow Alteration	Y	2, 5, 6, 7, 8, 9, 10	Y	
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 4, 9		
Nutrient Removal	Y	3, 4, 7		
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	1, 3, 5, 7		
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.79 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use forest, road Distance to nearest roadway or other development 30 ft

Dominant wetland systems present PEM, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 08

Latitude 39.40914 Longitude -76.73944

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.70

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5		Wetland appears to receive most of its hydrology from the adjacent road; this hydrology is slowed within the wetland and likely recharges groundwater
Floodflow Alteration	Y	5, 6, 7, 8, 9, 10		Located within the Jones Falls floodplain, but likely only receives flood flow during extremely large storms; largely disconnected from floodplain.
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	2, 4, 9	Y	Wetland captures flow from adjacent road that lacks stormwater treatment. Wetland likely retains road salts.
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 5, 6, 7, 8	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 4.58 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, farm field Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM, PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 09

Latitude 39.40830 Longitude -76.73974

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 4.59

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5, 7, 10	Y	
Floodflow Alteration	Y	5, 6, 7, 8, 9, 10, 13		Located within the Jones Falls floodplain, but likely only receives flood flow during extremely large storms; largely disconnected from floodplain.
Fish and Shellfish Habitat				
Sediment/Toxicant Retention	Y	1, 2, 3, 4, 5	Y	
Nutrient Removal	Y	3, 4, 5, 7, 10	Y	
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	3, 5, 6, 7, 8, 20	Y	
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.04 Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Trees and farm field Distance to nearest roadway or other development 80 ft

Dominant wetland systems present PUB Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 10

Latitude 39.40892 Longitude -76.73609

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.04

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	13, 15		Wetland has formed in an abandoned quarry and is permanently inundated; the quarry appears to have intercepted the water table
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat	Y	4		
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.02 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Farm field, forest Distance to nearest roadway or other development 10 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 11

Latitude 39.40747 Longitude -76.73444

Prepared by: ERM Date 6/1/18

Wetland Impact:
Type Temporary Area 0.02

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5		Wetland appears to collect runoff from adjacent farm fields, likely recharges groundwater to some extent but function is limited by small wetland size.
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				Wetland is likely connected to WUS 20, WUS 21, and WUS 05 through subsurface flow

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.10 ac Human made? N Is wetland part of a wildlife corridor? Y or a "habitat island"? N

Adjacent land use Agriculture Distance to nearest roadway or other development 1,260 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present Y

Is the wetland a separate hydraulic system? N If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 12

Latitude 39.40630 Longitude -76.73447

Prepared by: AS Date 5/3/19

Wetland Impact:
Type _____ Area _____

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	4,7,15		
Floodflow Alteration	Y	3,5,7,8,9,13,16,18	Y	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,10,11,16	Y	
Nutrient Removal	Y	4,8,9,10,12,14	Y	
Production Export	N	1		
Sediment/Shoreline Stabilization	Y	1,2,3,4,5,12		
Wildlife Habitat	Y	5,7,8,17,18,20		Tadpoles and deer tracks
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.04 Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Farm field Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 20

Latitude 39.40844 Longitude -76.73597

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.04

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5		Wetland appears to collect runoff from adjacent farm fields, likely recharges groundwater to some extent but function is limited by small wetland size.
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.03 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Farm field and forest Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 21

Latitude 39.40786 Longitude -76.73529

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.03

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5		Wetland appears to collect runoff from adjacent farm fields, likely recharges groundwater to some extent but function is limited by small wetland size.
Floodflow Alteration				
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				Wetland is likely connected to WUS 21 and WUS 05 through subsurface flow

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.10 Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Farm fields Distance to nearest roadway or other development 0 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WET 22

Latitude 39.40873 Longitude -76.73492

Prepared by: ERM Date 4/13/18

Wetland Impact:
Type Temporary Area 0.10

Evaluation based on:
Office x Field x

Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	5		Excess flow from WUS 21 spreads into WET 22, and likely filters to some extent back into the water table
Floodflow Alteration	Y	3, 9, 13, 14		During large rain fall events, flood flow likely is too large to be carried by the diversion pipe to WUS 21/WET 22 and is likely carried by WUS 20's channel
Fish and Shellfish Habitat				
Sediment/Toxicant Retention				
Nutrient Removal				
Production Export				
Sediment/Shoreline Stabilization				
Wildlife Habitat				
Recreation				
Educational/Scientific Value				
Uniqueness/Heritage				
Visual Quality/Aesthetics				
ES Endangered Species Habitat				
Other				

Notes:

* Refer to backup list of numbered considerations.