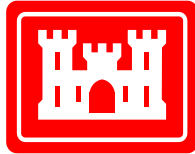


WETLAND DELINEATION REPORT
Bureau of Engraving and Printing
Beltsville Agricultural Research Center
Beltsville, Maryland



Prepared for:

Bureau of Engraving and Printing
Washington, DC

Prepared by:

U.S. Army Corps of Engineers
Baltimore District, Planning Division
2 Hopkins Plaza
Baltimore, Maryland 21201

January 2020

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	STUDY PURPOSE.....	1
1.2	STUDY AREA	1
2.0	METHODS	2
2.1	DATA COLLECTION AND ANALYSIS	2
2.2	WETLAND DELINEATION.....	2
2.3	GLOBAL POSITIONING SYSTEM (GPS) METHODOLOGY	2
3.0	RESULTS	2
3.1	GENERAL WETLAND FINDINGS	2
3.1.1	VEGETATION	3
3.1.2	GENERAL SOIL CHARACTERISTICS.....	3
3.1.3	HYDROLOGY	4
3.2	STREAMS	4
3.3	WETLANDS.....	4
4.0	CONCLUSIONS	6
5.0	REFERENCES	8

LIST OF TABLES

Table 3-1.	Soils at BEP	3
Table 3-2.	Streams at BEP	4
Table 3-3.	Wetlands at BEP	6

APPENDICES

- Appendix A: Figures
 - Figure 1: Vicinity Map
 - Figure 2: Soils Map
 - Figure 3: BEP Delineated Wetlands and Streams
- Appendix B: Routine Wetland Data Forms
- Appendix C: Photographs

THIS PAGE INTENTIONALLY LEFT BLANK

1.0 INTRODUCTION

1.1 STUDY PURPOSE

The U.S. Army Corps of Engineers (USACE), Baltimore District, Planning Division prepared this report at the request of the United States Department of the Treasury (USDT), Bureau of Engraving and Printing (BEP), to identify and delineate waters of the U.S. (i.e., wetlands and streams) found within the proposed site boundaries.

The BEP proposes to construct and operate a new currency production facility at the site, within the existing Beltsville Agricultural Center (BARC), in Prince George's County, Maryland. The new facility would replace BEP's current Currency Production Facility located in Washington, D.C. with a more modern facility that meets modern production needs. A smaller, strategically located, modern currency production facility would streamline work production and flow processes while increasing operational safety and security. Construction of such a facility would also reduce BEP's operational footprint within the national capital region by approximately 27 percent.

BARC, as a whole, is 6,850 acres of land northeast of Washington D.C. The new currency production facility would be an approximately 1 million square foot facility located on a 104-acre site in the Central Farm area of BARC, along Poultry Road.

The study purpose was achieved through (1) collection and synthesis of existing wetlands and waters of the U.S. information; (2) a site visit to conduct routine wetland delineation as prescribed in the 1987 *Corps of Engineers Wetland Delineation Manual* and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*; and (3) preparation of a report of findings, including a Preliminary Jurisdictional Determination Form to support a Jurisdictional Determination by the USACE, Baltimore District, Operations Division, Regulatory Branch.

1.2 STUDY AREA

The study area is a 104-acre parcel of land within the exiting BARC, in Beltsville, Maryland. It is bisected by Poultry Road, which runs north south. The property consists of cropland, forest, pasture, wetlands and paved and unpaved roads. In general, surface water appears to drain from the northeast to the southwest border of the Property.

Sixteen abandoned buildings, which were dedicated to poultry research, are located in the center of the site. The western portion of the site is comprised of cropland and pasture. The eastern area of the site is comprised of forest and pasture with two buildings and one small shed. One of the buildings was dedicated to poultry research and one currently serves as BARC's Wildlife Office. The shed is used by the Wildlife Office to store animal traps and related paraphernalia. 188 specimen trees are located throughout the property.

The geology at the proposed BEP site consists of Lower Cretaceous sediments of the Potomac Group, which consists of the Patuxent, the Arundel, and the Patapsco Formations, respectively

decreasing in age. The Patuxent and Patapsco Formations are composed primarily of sand and gravel and comprise the most prevalent water bearing aquifers in Prince George's County. The Arundel is mostly clay and creates artesian conditions in the underlying Patuxent Formation in some locations.

2.0 METHODS

2.1 DATA COLLECTION AND ANALYSIS

Existing wetland information and GIS data were collected from various sources for preliminary analysis and identification of potential wetland areas within the study area. Sources of data include: U.S. Geological Survey (USGS) topographic quadrangles (USGS, 1977), U.S. Department of Agriculture (USDA) web soil survey (USDA, 2011), and U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) maps (including aerial photography) (USFWS, 2011). The results of the delineation are presented in Figures 4 through 7, Appendix A.

2.2 WETLAND DELINEATION

The wetland delineation was performed pursuant to the 1987 *Corps of Engineers Wetland Delineation Manual* and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*, as Federal and state agencies require use of these documents for jurisdictional investigations. The delineation field work was conducted in May and July 2019. All delineations were conducted by a team from USACE, Baltimore District, Planning Division. Data points were completed for each wetland. Wetland boundaries were marked with consecutively numbered pink survey flagging. Photographs of streams and wetlands are included in Appendix C.

2.3 GLOBAL POSITIONING SYSTEM (GPS) METHODOLOGY

The field survey was completed using the Trimble GeoXH handheld Global Positioning System (GPS). The objective of the GPS survey was to collect location data for each wetland delineation flag and soil sample point. This survey horizontally references the North American Datum of 1983 (NAD83). This data was then transferred into ArcGIS 11.2 for analysis and mapping.

3.0 RESULTS

3.1 GENERAL WETLAND FINDINGS

Wetlands are defined by the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Methods for determining if each of the three parameters met are described in the 1987 *Corps of Engineers Wetland Delineation Manual* and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*.

Preliminary analysis of topographic maps, soils and NWI wetland mapping indicated the presence of wetlands and streams within the study area. Elkton silt loam, listed as hydric on the hydric soils

list (USDA, 2011) is associated with coastal plains. The BEP site is not located within a 100-year floodplain, although sections of the larger BARC area are within the 100-year floodplain.

The USACE team placed numbered flags along the limits of 5 wetlands and 1 stream reach. The flags were located using GPS survey methods. The delineated areas amount to approximately 3.19 acres of wetlands and 1,196 linear feet of stream channel (Tables 3.2 and 3.3, Section 3.2). Stream reach WUS 4 continues downstream out of the study area, into Beaver Creek, flowing into Indian Creek, which is a tributary of the Anacostia River. The map of the streams and wetlands delineated at the proposed BEP site is shown in Figure 3, Appendix A.

3.1.1 VEGETATION

For purposes of wetland identification, many plants are assigned an indicator status by the USFWS, which is useful for determining the probability of their occurrence in wetlands. Wetlands delineated within the study area were dominated by plants normally expected to occur within wetlands. No plant species observed on the site are listed as rare, threatened, or endangered at either a federal or state level.

3.1.2 GENERAL SOIL CHARACTERISTICS

The USDA web soil survey (USDA, 2011) identifies seven (7) soil series within the study area, which are shown in Table 3.1 (see Figure 2, Appendix A). The table lists the soil name, the drainage class, and hydric status.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

Drainage class refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained.

Table 3-1. Soils at BEP

Soil Name	Map Symbol	Drainage Class	Hydric
Christiana-Downer complex, 5 to 10 percent slopes	CcC	Moderately well drained	No
Christiana-Downer complex, 10 to 15 percent slopes	CcD	Moderately well drained	No
Christiana-Downer complex, 15 to 25 percent slopes	CcE	Moderately well drained	No
Elkton silk loam, 0 to 2 percent slopes	EkA	Poorly Drained	Yes
Russett-Christiana complex, 0 to 2 percent slopes	RcA	Moderately well drained	No
Russett-Christiana complex, 2 to 5 percent slopes	RcB	Moderately well drained	No
Russett-Christiana Urban land complex, 0 to 5 percent slopes	RuB	Moderately well drained	No

3.1.3 HYDROLOGY

Evidence of wetland hydrology was observed in the areas identified as wetlands during the site investigation, and included surface water, iron deposits, saturation, and water-stained leaves.

3.2 STREAMS

The dominant hydrologic feature on the proposed site is an intermittent stream (WUS-4) near the southeast corner and the abutting emergent wetland. WUS-4 originates east of the proposed site, flows west southwest across the southern portion of the proposed site, crosses under Poultry Road, then turns south and flows parallel to the west side of Poultry Road. After leaving the site, WUS-4 flows into Beaver Dam Creek, which flows to Indian Creek, which is a tributary of the Northeast Branch of the Anacostia River. Ultimately, the Anacostia River empties into the Potomac River, which discharges in Chesapeake Bay. One other intermittent stream (WUS-5) was flagged, but is located south of the proposed sites southern boundary.

Descriptions are provided in Table 3.2. A classification key follows the table.

Table 3-2. Streams at BEP

Stream Reach	Classification	Linear Feet (LF) within the site	Average Width (feet)	Connection to Navigable Waters
WUS-4	R4SB3/4	1,196	2-3	Flows to Beaver Creek, Indian Creek, Anacostia River, Potomac River to Chesapeake Bay
WUS-5*	R4SB3/4	0	2-3	Flows to WUS 4, Beaver Creek, Indian Creek, Anacostia River, Potomac River to Chesapeake Bay
	Total	1,196 LF		

Classification Key

R4SB3/4: Riverine intermittent with a streambed of cobble-gravel and sand

*WUS 5 – Not within the proposed site boundaries, but within the area of potential effect of site development

3.3 WETLANDS

Five wetlands were delineated within the proposed site, amounting to approximately 3.19 acres. Wetland data forms are located in Appendix C.

Wetland 1 is a seep within the mature forest in the northeast corner of the site. It is classified as palustrine forested with broad-leaved deciduous vegetation and a saturated water regime (PFO1B). The dominant species observed were red maple (*Acer rubrum*) FAC, willow oak (*Quercus phellos*) FACW, Japanese stilt grass (*Microstegium vimineum*) FAC, and Chinese privet (*Ligustrum vulgare*) NI. Indicators for wetland hydrology were surface water, saturation, water-stained leaves, and oxidized rhizospheres along living roots. The soil matrix was predominantly 10YR 4/2 with redoximorphic features of 10YR 4/6 which meets the hydric soil criteria for a depleted matrix.

Wetland 2 is isolated and classified as palustrine emergent with non-persistent vegetation and a seasonally flooded/saturated water regime (PEM2E). Hydrology appears to be effected by a raised gravel road, constructed over 40 years ago, which is ponding water in Wetland 2. Dominant vegetation included reed-canary grass (*Phalaris arundinacea*) FACW, barn-yard grass (*Echinochloa cruz-gali*) FACW, and mild water-pepper (*Persicaria hydropiperoides*) OBL. Indicators for wetland hydrology were surface water, water-stained leaves, and oxidized rhizospheres along living roots. The soil matrix was predominantly 10YR 5/2 with redoximorphic features of 7.5YR 4/6 which meets the hydric soil criteria for a depleted matrix.

Wetland 3 is located in the south central portion of the site, east of Poultry Road. It is classified as palustrine emergent with non-persistent vegetation and a saturated water regime (PEM2B). Hydrology is groundwater. Dominant vegetation included soft rush (*Juncus effusus*) OBL, and mild water-pepper. Indicators for wetland hydrology were water-stained leaves, and oxidized rhizospheres along living roots. The soil matrix was predominantly 7.5YR 4/3 with redoximorphic features of 7.5YR 2.5/1 which makes it a problematic soil due to its origins from red parent material.

Wetland 4 is located in the southeastern portion of the site. It is classified as palustrine emergent with non-persistent vegetation and a seasonally flooded/saturated water regime (PEM2E). Wetland 4 considered jurisdictional and regulated by USACE due to direct connections to downstream receiving waters (e.g. Beaver Creek and/or its tributaries). Dominant vegetation included Japanese stilt grass (*Microstegium vimineum*) FAC, soft rush, and reed-canary grass. Indicators for wetland hydrology were surface water, saturation, water-stained leaves, and oxidized rhizospheres along living roots. The soil matrix was predominantly 10YR 4/2 with redoximorphic features of 10YR 4/6 which meets the hydric soil criteria for a depleted matrix.

Wetland 6 is isolated and classified as palustrine emergent/scrub shrub with persistent vegetation and a seasonally flooded/saturated water regime (PEM/SS2E). It is located in the northern portion of the site, east of Poultry Road. The majority of Wetland 6 is within the existing reforestation easement, so only the southern boundary of the wetland was flagged and located. Dominant vegetation included reed-canary grass, New York ironweed (*Vernonia noveboracensis*) FACW, willow oak, red maple, poison ivy (*Toxicodendron radicans*) FAC, and pin oak (*Quercus palustris*) FACW. Indicators for wetland hydrology were surface water, water-stained leaves, and oxidized rhizospheres along living roots. The soil matrix was predominantly 10YR 5/2 with redoximorphic features of 7.5YR 4/6 which meets the hydric soil criteria for a depleted matrix.

- FAC: Facultative Hydrophyte - Sometimes found in wetlands (34-66% frequency)
- FACW: Facultative Wet Hydrophyte - Usually found in wetlands (66-99% frequency)
- OBL: Obligate Hydrophyte - Almost always found in wetlands (99+% frequency)
- NI: No Indicator – USDA has not assigned an indicator status for the species

Descriptions of each wetland are provided in Table 3.3. A classification key follows the table.

Table 3-3. Wetlands at BEP

Wetland	Cowardin Classification	Acreage within the site	Data Point	Connection to Navigable Waters
Wetland 1	PFO1B	0.05	DP-1	Forested seep in northeast corner of site (Isolated)
Wetland 2	PEM2E	0.33	DP-3	In northwest corner of site (Isolated)
Wetland 3	PEM2B	0.40	DP-5	East central portion of site (Isolated)
Wetland 4	PEM2E	1.95	DP-3 & 7	Emergent wetland abutting WUS-4. Flows southwest off-site to Beaver Creek
Wetland 6	PEM/SS2E	0.46		Emergent fringe to scrub/shrub wetland within existing Forest Conservation Easement in north central portion of site
	Total	3.19 Acres		

4.0 CONCLUSIONS

Five wetlands and one stream reach were delineated by USACE, Baltimore District, Planning Division, within the proposed boundary of BEP, on Poultry Road in Greenbelt, Maryland. The delineation was performed in July and August 2019.

The jurisdiction of the wetlands included in this report have not been verified by U.S Army Corps of Engineers (USACE)-Regulatory Branch or Maryland Department of the Environment (MDE) Any future design or construction that may impact these wetlands or the wetland buffers will require coordination with the USACE and MDE, specifically in regard to potential permitting actions within Section 404, Section 10, and all other potential permitting actions.

THIS PAGE INTENTIONALLY LEFT BLANK

5.0 REFERENCES

- Munsell Color. 1992. *Munsell Color Charts – 1992 Revised Edition*. Kollmorgen Corporation. Baltimore, MD. Not paginated.
- Reed, Porter B., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northeast (Region 1). U.S. Fish and Wildlife Service, National Ecology Research Center. Biological Report 88(26.1). Fort Collins, CO. 111p.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service. 2018. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed June 2015.
- USDA Natural Resources Conservation Service. Updated frequently. National Plants Database, available at <http://plants.usda.gov/index.html>
- U.S. Department of the Army, Environmental Laboratory (USDOA-EL). 1987. *Corps of Engineers Wetlands Delineation Manual*. Final Report. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. St. Petersburg, FL.
- U.S. Department of the Army, Environmental Laboratory (USDOA-EL). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*. Technical Report 10-20. U.S. Army Engineer Research and Development Center. Vicksburg, MS.
- U.S. Fish and Wildlife Service. 2015. National Wetlands Inventory, Conterminous 48 States. Washington, D.C. Updated continuously.

APPENDIX A
Figures

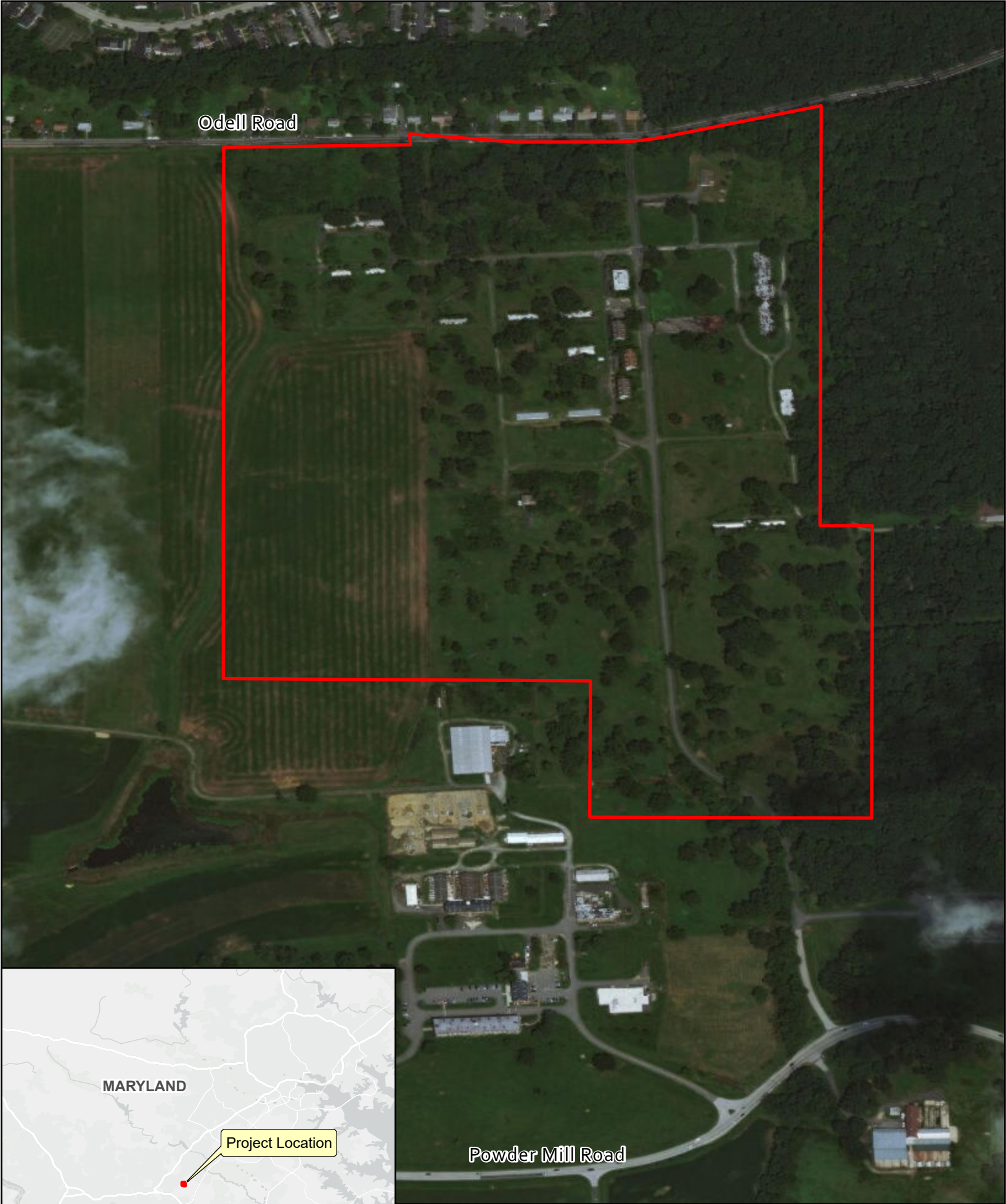
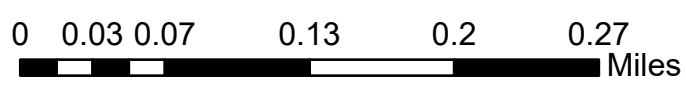
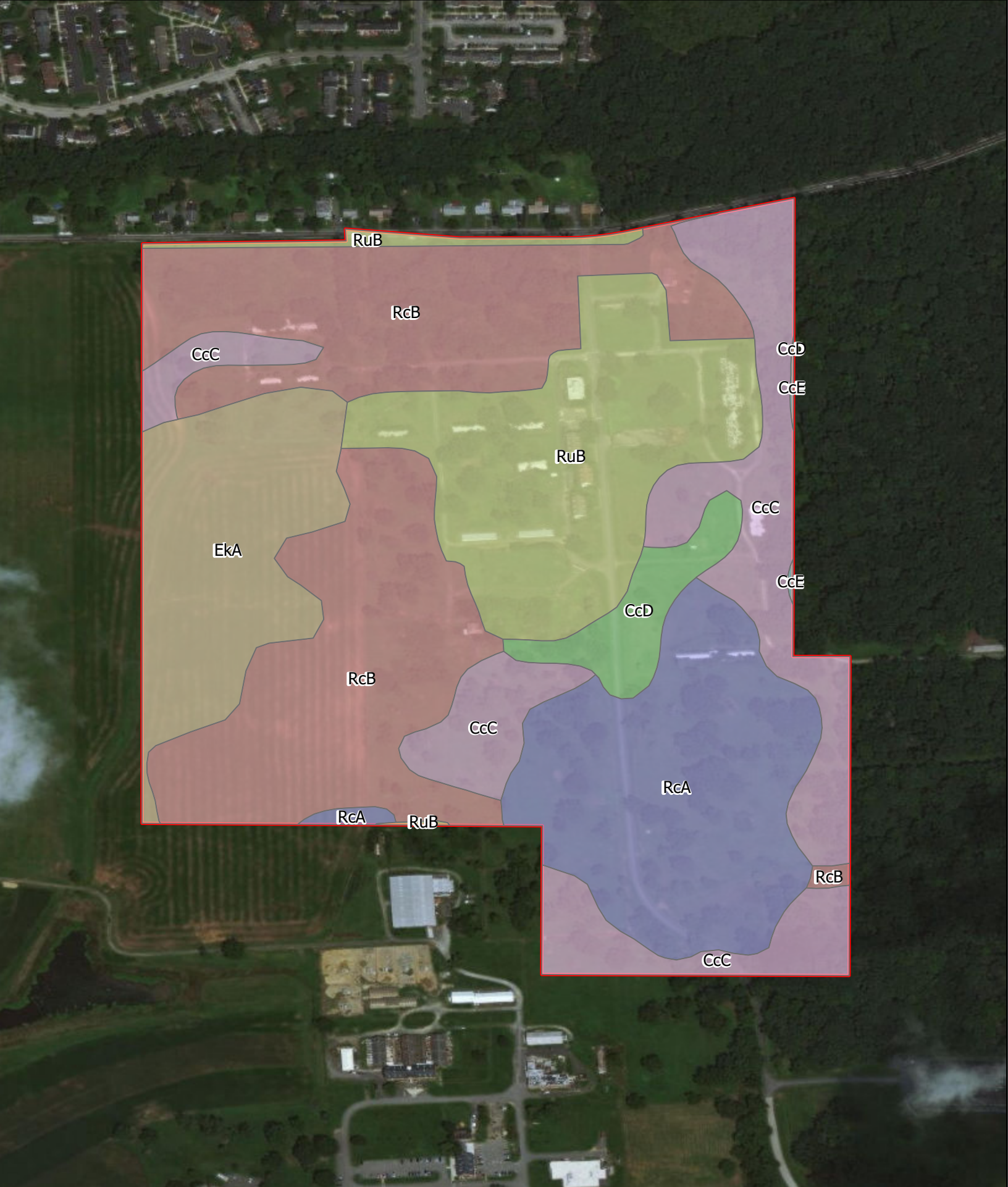


Figure 1: Project Vicinity





Legend









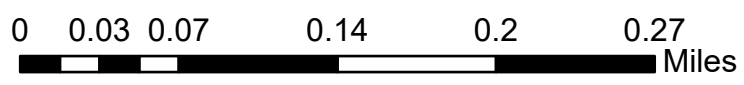
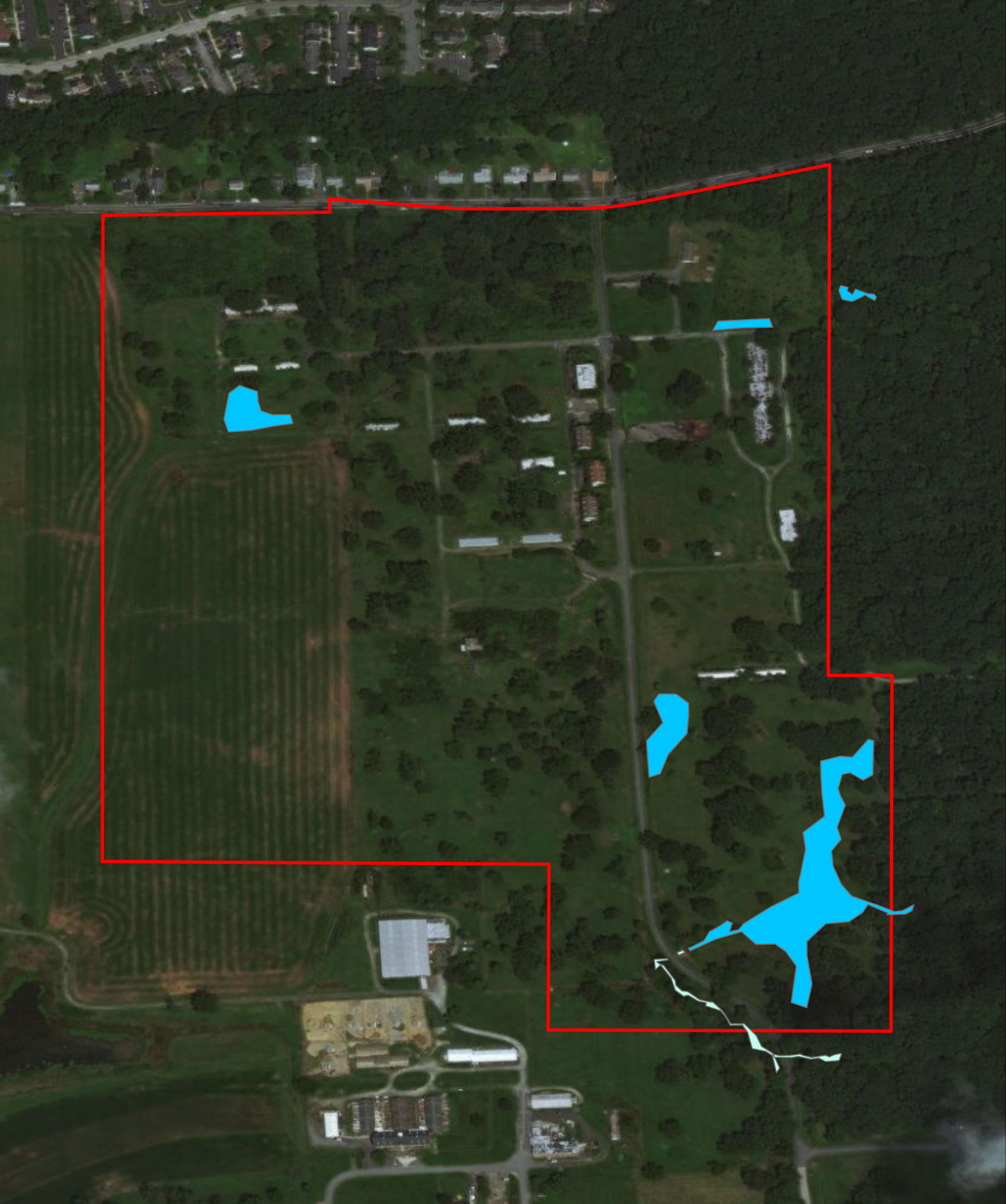
 CcC	 RcA
 CcD	 RcB
 CcE	 RuB
 EKA	 Proposed Site Boundary

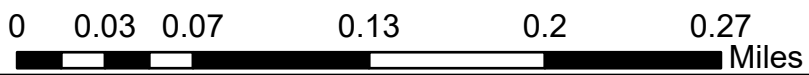
Figure 2: Soils Map





- Legend
- Wetlands
 - Streams
 - Proposed Site Boundary

Figure 3: BEP Delineated Wetlands and Streams



APPENDIX B
Routine Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 7-17-19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-1
 Investigator(s): DRC/CR Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Hillslope Steep Local relief (concave, convex, none): Concave Slope (%): 5-8%
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39° 02' 32.40" Long: 76° 52' 50.30" Datum: NAD83
 Soil Map Unit Name: Christiana-Downer Complex 10-15% slopes NWI classification: PEM
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Below and old dirt road, but lower end of the hillside drainage collecting into more discreet depression. Empties into the open area next to reforestation area. Near flag W1-5	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) _____ Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) _____ Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) _____ Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) _____ Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) <input checked="" type="checkbox"/> Iron Deposits (B5) _____ Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)
---	--

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <u>X</u> No _____ Depth (inches): _____	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Interior relatively unvegetated with standing water	

VEGETATION (Five Strata) - Use scientific names of plants.

<u>Tree Stratum</u> (Plot Size: <u>20-foot radius plot</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Acer rubrum</u>	25	Y	FAC
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		25	= Total Cover	
50% of total cover:		_____	20% of total cover:	_____

<u>Sapling Stratum</u> (Plot Size: <u>20-foot radius plot</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____	= Total Cover	
50% of total cover:		_____	20% of total cover:	_____

<u>Shrub Stratum</u> (Plot Size: <u>20-foot radius plot</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum vulgare</u>	10	Yes	UPL
2.	<u>Quercus phellos</u>	10	Yes	FACW
3.	<u>Quercus palustris</u>	5	No	FACW
4.	<u>Ilex opaca</u>	10	Yes	FAC
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		35	= Total Cover	
50% of total cover:		18	20% of total cover:	7

<u>Herb Stratum</u> (Plot Size: <u>10-foot radius plot</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Parthenococcus quinquefolia</u>	30	Yes	FACU
2.	<u>Microstegium vimineum</u>	10	No	FAC
3.	<u>Nyssa sylvatica</u>	10	No	FAC
4.	<u>Geum canadensis</u>	5	No	FAC
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
		55	= Total Cover	
50% of total cover:		28	20% of total cover:	11

<u>Woody Vine Stratum</u> (Plot Size: <u>20-foot radius plot</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
		_____	= Total Cover	
50% of total cover:		_____	20% of total cover:	_____

Sampling Point:

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>60</u> (A/B)

Prevalence Index worksheet:	
<u>Total % Cover of:</u>	<u>Multiply by:</u>
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 ¹
_____	Problematic Hydrophytic Vegetation ¹
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-2	10/YR 2/2	100					Clay loam	Dark organic layer
2-8	10 YR 4/2	80	10 YR 4/6	20	C	M	Clay loam	Prominent redox concentrations
8-12	10 YR 5/3	60	5 YR 4/6	40	C	M	Clay loam	Prominent redox concentrations

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (Outside MLRA 150A, B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)		
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

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

Restrictive Layer (if observed):	Hydric Soil Present?	Yes	X	No
Type: _____				
Depth (inches): _____				

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 7/17/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-2
 Investigator(s): DRC/CR Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Toe slope Local relief (concave, convex, none): none Slope (%): 3-5%
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39° 02' 32.86" Long: 76° 52' 52.60" Datum: NAD83
 Soil Map Unit Name: Christiana-Downer Complex 5-10% slopes NWI classification: UPL
 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Data point for upland adjacent to Wetland 1 Area relatively flat; driven on infrequently and mowed	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)

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 <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No signs of wetland hydrology	

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sapling Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Shrub Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Herb Stratum (Plot Size: 10-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	60	Yes	FAC
2. <u>Panicum virgatum</u>	10	No	FAC
3. <u>Juncus tenuis</u>	5	No	FAC
4. <u>Lonicera japonica</u>	10	No	FAC
5. <u>Potenilla simplex</u>	5	No	FACU
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	90	= Total Cover	
50% of total cover:	45	20% of total cover:	18

Woody Vine Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sampling Point: **2**

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (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 ¹	
Problematic Hydrophytic Vegetation ¹	
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-1	10YR 2/2	100					Clay loam	Organic
1-4	10 YR4/3	95	7.5YR 3/4	5	C	M	Clay loam	Faint redox concentrations
4-12	10YR 4/4	70	10YR 2/1	30	C	M	Clay loam	Distinct redox concentrations

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

Hydric Soil Indicators:

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) | <input type="checkbox"/> 2 cm Muck (A10) (LRR S) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) | <input type="checkbox"/> Reduced Vertic (F18) (Outside MLRA 150A, B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) |
| <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> (MLRA 153B) |
| <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Muck Presence (A8) (LRR U) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) | <input type="checkbox"/> Marl (F10) (LRR U) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) | |
| <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) | <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) | <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |
| <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | | |

³Indicators 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:

Possible area of historic past tilling/farming because top layer seems like fill (homogenized)

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 7/17/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-3
 Investigator(s): DRC/CR Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat pasture Local relief (concave, convex, none): None Slope (%): <1%
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39° 02' 16.16" Long: 76° 52' 53.50" Datum: NAD83
 Soil Map Unit Name: Russett-Christiana Complex, 0-2% slopes NWI classification: PEM
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Data point for Wetland 4. Sample point located within the open, grassy pasture east of Poultry Road, near the western edge of the large, forested area that comprises the eastern portion of the project site.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) <u>X</u> Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ 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) ___ Geomorphic Position (D2) <u>X</u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) ___ Sphagnum Moss (D8) (LRR T, U)
--	---

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u> Depth (inches): _____	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Soil within 10 inches of the surface was a very dense clay that appears to act as an aquitard.	

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sapling Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Shrub Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Herb Stratum (Plot Size: 10-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	30	Yes	FAC
2. <u>Juncus effusus</u>	15	Yes	OBL
3. <u>Agrostis gigantea</u>	10	No	FACW
4. <u>Panicum hydropiperoides</u>	5	No	OBL
5. <u>Scirpus atrovirens</u>	10	No	OBL
6. <u>Salix nigra</u>	5	No	FACW
7. <u>Carex vulpinoidea</u>	5	No	OBL
8. <u>Phalaris arundinacea</u>	15	Yes	FACW
9. <u>Boehmeria cylindrica</u>	10	No	FACW
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	105	= Total Cover	
50% of total cover:	53	20% of total cover:	21

Woody Vine Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sampling Point:

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)

Prevalence Index worksheet:	
<u>Total % Cover of:</u>	<u>Multiply by:</u>
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 ¹
_____	Problematic Hydrophytic Vegetation ¹
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-2	10 YR 4/3	90	10 YR 4/6	10	C	M	Clay loam	Many organics
2-10	10YR 4/2	95	10YR 4/6	5	C	M	Clay loam	Distinct redox concentrations
10-14	10YR 7/6	60	10YR 5/8	40	C	M	Clay loam	Distinct redox concentrations

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (Outside MLRA 150A, B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	---

Remarks:
 Numerous concretions within 4-12 inches of surface (color 10YR 2/1). Lower layer (10-14 inches) has bright red depletions (10R 4/8, 20%).

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 8/07/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-4
 Investigator(s): DRC/MW Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat pasture Local relief (concave, convex, none): concave Slope (%): 1%
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39° 02' 28.37" Long: 76° 53' 11.80" Datum: NAD 83
 Soil Map Unit Name: Elkton silt loam, 0-2% slopes NWI classification: PEM
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Wetland 2 Data point – isolated depressional wetland	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) _____ Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) _____ Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) _____ Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) _____ Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) (LRR T, U)
--	--

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>3"</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <u>X</u> No _____ Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Inundation appears to have been created by raised gravel road which prevents drainage	

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sapling Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Shrub Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Herb Stratum (Plot Size: 10-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Phalaris arundinacea</u>	60	Y	FACW
2. <u>Echinochloa cruz-gali</u>	10	N	FACW
3. <u>Persicaria hydropiperoides</u>	25	Y	OBL
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	95	= Total Cover	
50% of total cover:	47.5	20% of total cover:	19

Woody Vine Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sampling Point:

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

Prevalence Index worksheet:	
<u>Total % Cover of:</u>	<u>Multiply by:</u>
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 ¹
_____	Problematic Hydrophytic Vegetation ¹
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 8/07/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-5
 Investigator(s): DRC/MW Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat pasture Local relief (concave, convex, none): _____ Slope (%): 1%
 Subregion (LRR or MLRA): MLRA S 149A Lat: 39° 02' 28.86" Long: 76° 53' 09.79" Datum: NAD 83
 Soil Map Unit Name: Elkton silt loam, 0-2% slopes NWI classification: UPL
 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Upland point adjacent to Wetland 2	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ 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) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum Moss (D8) (LRR T, U)
---	---

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No signs of wetland hydrology	

VEGETATION (Five Strata) - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot Size: <u>20-foot radius plot</u>)				
1.	<u>Carya tomentosa</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
	<u>20</u>	<u>= Total Cover</u>		
50% of total cover:	_____	20% of total cover:	_____	

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Sapling Stratum</u> (Plot Size: <u>20-foot radius plot</u>)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		<u>= Total Cover</u>		
50% of total cover:	_____	20% of total cover:	_____	

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Shrub Stratum</u> (Plot Size: <u>20-foot radius plot</u>)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		<u>= Total Cover</u>		
50% of total cover:	_____	20% of total cover:	_____	

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Herb Stratum</u> (Plot Size: <u>10-foot radius plot</u>)				
1.	<u>Festuca rubra</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2.	<u>Toxicodendron radicans</u>	<u>15</u>	<u>N</u>	<u>FAC</u>
3.	<u>Pyrus callerana</u>	<u>5</u>	<u>N</u>	<u>NI</u>
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
	<u>90</u>	<u>= Total Cover</u>		
50% of total cover:	<u>45</u>	20% of total cover:	<u>18</u>	

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Woody Vine Stratum</u> (Plot Size: <u>20-foot radius plot</u>)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
		<u>= Total Cover</u>		
50% of total cover:	_____	20% of total cover:	_____	

Sampling Point:

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (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 ≤3.0¹

_____ Problematic Hydrophytic Vegetation¹

(Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

Hydrophytic Vegetation Present? Yes _____ No X

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-3	10YR 3/4	100					loam	
3-12	10YR 4/4	100					loam	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18) (Outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	
<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	

³Indicators 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 - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 8/07/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-6
 Investigator(s): DRC/MW Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat pasture Local relief (concave, convex, none): concave Slope (%): 3%
 Subregion (LRR or MLRA): MLRA S 149A Lat: 39° 02' 19.16" Long: 76° 52' 57.65" Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: PEM
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Wetland 3 Data point	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) <u>X</u> Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) ___ Geomorphic Position (D2) <u>X</u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) ___ Sphagnum Moss (D8) (LRR T, U)
---	---

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u> Depth (inches): _____	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sapling Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Shrub Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Herb Stratum (Plot Size: 10-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Persicaria sagittata</u>	8	N	OBL
2. <u>Echinochloa cruz-gali</u>	10	N	FACW
3. <u>Persicaria hydropiperoides</u>	15	Y	OBL
4. <u>Juncus effuses</u>	30	Y	OBL
5. <u>Arthraxon hispidus</u>	5	N	FAC
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	68	= Total Cover	
50% of total cover:	34	20% of total cover:	13.6

Woody Vine Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sampling Point:

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (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 ¹
_____	Problematic Hydrophytic Vegetation ¹
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-2	10 YR 4/3	80	7.5YR 4/6	20	C	PL	loam	
2-4	7.5YR 4/4	70	7.5YR 2.5/ 1	30	C	M	Clay loam	
4-11	7.5YR 5/6	80	7.5YR 2.5/ 1	20	C	M	Clay	

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

Hydric Soil Indicators:**Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (Outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators 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 - Atlantic and Gulf Coastal Plain Region

Project/Site: Bureau of Engraving and Printing on BARC City/County: Greenbelt/PG Sampling Date: 8/07/19
 Applicant/Owner: Bureau of Engraving and Printing State: MD Sampling Point: DP-7
 Investigator(s): DRC/MW Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat pasture Local relief (concave, convex, none): concave Slope (%): <1%
 Subregion (LRR or MLRA): MLRA S 149A Lat: 39° 02' 11.88" Long: 76° 52' 54.51" Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: PEM
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Wetland 4 Data point Southern portion of wetland 4, south of the intermittent stream channel (WUS-4)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) <u>X</u> Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) ___ Geomorphic Position (D2) <u>X</u> Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) ___ Sphagnum Moss (D8) (LRR T, U)
---	---

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1"</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>6"</u> Saturation Present? (includes capillary fringe) Yes <u>X</u> No _____ Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Emergent wetland surrounding intermittent stream channel (WUS-4)	

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sapling Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Shrub Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Herb Stratum (Plot Size: 10-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	50	Y	FAC
2. <u>Phalaris arundinacea</u>	60	Y	FACW
3. <u>Persicaria hydropiperoides</u>	5	N	OBL
4. <u>Vernonia noveboracensis</u>	15	N	FACW
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	130	= Total Cover	
50% of total cover:	65	20% of total cover:	26

Woody Vine Stratum (Plot Size: 20-foot radius plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
		= Total Cover	
50% of total cover:	_____	20% of total cover:	_____

Sampling Point:

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (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 ¹
_____	Problematic Hydrophytic Vegetation ¹
(Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	

Definitions of Five Vegetation Strata:	
Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.	
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine - All woody vines, regardless of height.	
Remarks: (if observed, list morphological adaptations below.)	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (Moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-1	10 YR 3/2	100					loam	
1-8	10YR 5/2	80	10YR 4/6	20	C	PL	Silt loam	
8-12	10YR 5/6	70	10YR 4/6	30	C	PL	Clay loam	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplains Soils (F19) (MLRA 149A)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (Outside MLRA 150A, B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	---

Remarks:

APPENDIX C
Photographs



Wetland 1 – Northeast portion of project site



Wetland 1



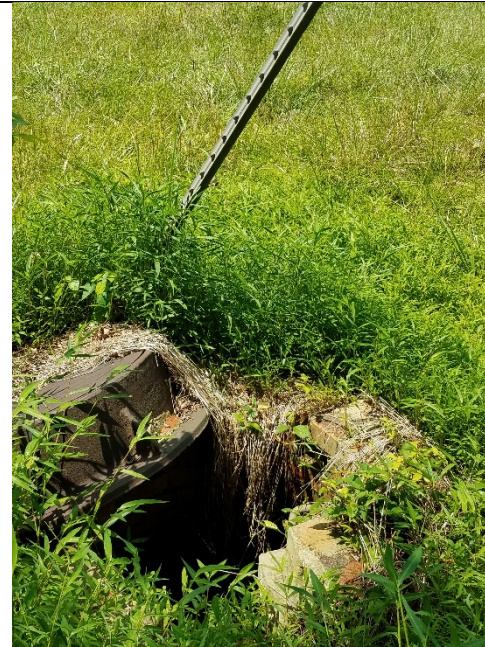
Wetland 1 – concrete headwall and terra cotta pipe at top of wet area



Data Point 2, east of reforestation area on northeast portion of site (view north). Upland area.



Wetland 4 (DP-3), pasture east of forest; large brush pile to right



Open manhole in center of pasture near DP-3; marked by two metal stakes painted green on their tips. Flow was visible at the bottom, travelling south.



Culvert which drains WUS-4 and Wetland 4 under Poultry Road

Wetland 4 (DP-3) drains to an intermittent stream to the south, which flows southwest across the pasture and crosses Poultry Road at this culvert structure.

